

National Bureau of Standards  
Library, N.W. Bldg

DEC 5 1961

FOR OFFICIAL USE

Reference book not to be  
taken from the library.

PART A

## IONOSPHERIC DATA

ISSUED  
NOVEMBER 1961

U. S. DEPARTMENT OF COMMERCE  
NATIONAL BUREAU OF STANDARDS  
CENTRAL RADIO PROPAGATION LABORATORY  
BOULDER, COLORADO



IONOSPHERIC DATA

CONTENTS

	<u>Page</u>
Symbols, Terminology, Conventions . . . . .	ii
World-Wide Sources of Ionospheric Data. . . . .	v
Tabulations of Electron Density Data. . . . .	viii
Tables of Ionospheric Data. . . . .	1
Graphs of Ionospheric Data. . . . .	13
Index of Tables and Graphs of Ionospheric Data in CRPL-F207 (Part A). . . . .	49

## SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, and continuing through December 1956, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1957, the symbols used are given in NBS Report 5033, "Summary of Changes in Ionospheric Vertical Soundings, Observing and Scaling Procedures - Effective 1 January 1957," which draws upon the First Report of the Special Committee on World-Wide Ionospheric Soundings (URSI/AGI), Brussels, Sept. 2, 1956. A list of these symbols is available upon request.

In the Second Report of the Special Committee on World-Wide Ionospheric Soundings of the URSI/AGI Committee, May 1957, a new descriptive letter was introduced:

- M Measurement questionable because the ordinary and extraordinary components are not distinguishable.

There was an expansion in meaning of the following:

- Z (1) (qualifying letter) Measurement deduced from the third magnetoionic component.  
(2) (descriptive letter) Third magnetoionic component present.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given above.

- a. For all ionospheric characteristics:

Values missing because of A, C, F, H, L, N or R are omitted from the median count.



b. For critical frequencies and virtual heights:

Values of foF2 (and foE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of h'F (and h'E near sunrise and sunset) missing for this reason are counted usually as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of G are counted:

1. For foF2, as equal to or less than foF1.
2. For h'F2, as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic; the descriptive symbol D, only when it replaces a frequency characteristic.

Values missing for any other reason are omitted from the median count.

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because of E or G are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

B for fEs is counted on the low side when there is a numerical value of a higher layer characteristic; otherwise it is omitted from the median count.

S for fEs is counted on the low side at night; during the day it is omitted from the median count (beginning with data for November 1957).

Values of fEs missing for any other reason, and values of h'Es missing for any reason at all are omitted from the median count.

Beginning with CRPL-F188, Part A, issued April 1960, the count is given for foF2 in the tables of medians. It is regretted that space limitations prevent including detailed counts for other characteristics.

To indicate further in a general manner the relative reliability of the data, for the F2 layer, h'F or foEs, if the count is from five to nine, or, for all layers, if more than half of the data used to compute the medians are doubtful (either doubtful or interpolated), the median is enclosed in parentheses. Medians are computed for less than five values for foF2 only.

Ordinarily, a blank space in the fEs or foEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of foE. Blank spaces at the beginning and end of columns of h'F2 or h'F1, foF1, h'E, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of h'F1 and foF1 is usually the result of seasonal effects.

There is no indication on the graphs of the relative reliability of the observed data; it is necessary to consult the tables for such information.

The tables may contain median values of either foEs or fEs. The graph of median Es corresponds to the table. Percentage curves of fEs are estimated from values of foEs when necessary.

The latest available information follows concerning the smoothed observed Zürich numbers beginning with the minimum of April 1954. Final numbers are listed through June 1960.

#### Smoothed Observed Sunspot Number

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1954				3	4	4	5	7	8	8	9	12
1955	14	16	19	23	29	35	40	46	55	64	73	81
1956	89	98	109	119	127	137	146	150	151	156	160	164
1957	170	172	174	181	186	188	191	194	197	200	201	200
1958	199	201	201	197	191	187	185	185	184	182	181	180
1959	179	177	174	169	165	161	156	151	146	141	137	132
1960	129	125	122	120	117	114	108	102	97	93	87	83
1961	79	74	68	63								

## WORLD - WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 72 and figures 1 to 143 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

Meteorological Service, Province of Macau, Asia:  
Macau

Australian Department of National Development, Bureau of Mineral  
Resources, Geology and Geophysics:  
Mundaring, Western Australia

University of Graz:  
Graz, Austria

Belgian Royal Meteorological Institute:  
Dourbes, Belgium

Escola Politecnica, University of Sao Paulo:  
Sao Paulo, Brazil

British Department of Scientific and Industrial Research, Radio  
Research Board:  
Falkland Is.  
Inverness, Scotland  
Port Lockroy  
Singapore, British Malaya  
Slough, England

Defence Research Board, Canada:  
Churchill, Canada  
Ottawa, Canada  
St. John's, Newfoundland  
Winnipeg, Canada

Universidad de Concepcion:  
Concepcion, Chile

Radio Wave Research Laboratories, National Taiwan University, Taipeh,  
Formosa, China:  
Formosa, China

Czechoslovak Academy of Sciences:  
Pruhonice, Czechoslovakia

Danish National Committee of URSI:  
Godhavn, Greenland  
Narssarssuaq, Greenland

General Direction of Posts and Telegraphs, Helsinki, Finland:  
Nurmijarvi, Finland

The Finnish Academy of Sciences and Letters:  
Sodanklya, Finland

Heinrich Hertz Institute, German Academy of Sciences, Berlin:  
Juliusruh/Rügen, Germany

Institute for Ionospheric Research, Lindau Uber Northeim, Hannover  
Germany:  
Lindau/Harz, Germany  
Tsumeb, South West Africa

The Royal Netherlands Meteorological Institute:  
De Bilt, Holland

Indian Council of Scientific and Industrial Research, Radio Research  
Committee, New Delhi, India:  
Calcutta (Institute of Radio Physics and Electronics)

National Institute of Geophysics, City University, Rome, Italy:  
Rome, Italy

Ministry of Postal Services, Radio Research Laboratories, Tokyo, Japan:  
Akita, Japan  
Tokyo (Kokubunji), Japan  
Wakkanaï, Japan  
Yamagawa, Japan

Christchurch Geophysical Observatory, New Zealand Department of  
Scientific and Industrial Research:  
Campbell I.  
Christchurch, New Zealand  
Rarotonga, Cook Is.

Norwegian Defence Research Establishment, Kjeller per Lillestrom, Norway:  
Tromso, Norway

Manila Observatory:  
Baguio, P. I.

Institute of Terrestrial Magnetism, Ionosphere and Radio Propagation,  
Moscow, U.S.S.R.:  
Moscow

South African Council for Scientific and Industrial Research:  
Capetown, Union of South Africa  
Johannesburg, Union of South Africa

Research Institute of National Defence, Stockholm, Sweden:  
Kiruna, Sweden  
Lycksele, Sweden  
Upsala, Sweden

Royal Board of Swedish Telegraphs, Radio Department, Stockholm, Sweden:  
Lulea, Sweden

Post, Telephone and Telegraph Administration, Berne, Switzerland:  
Sottens, Switzerland

United States Army Signal Corps:  
Grand Bahama I.

National Bureau of Standards (Central Radio Propagation Laboratory):  
Byrd Station, Antarctica  
Huancayo, Peru (Instituto Geofisico de Huancayo)  
Talara, Peru (Instituto Geofisico de Huancayo)  
Washington, D. C.

## TABULATIONS OF ELECTRON DENSITY DATA

Reduction of hourly ionospheric vertical soundings to electron density profiles has become a part of the systematic ionospheric data program of the Central Radio Propagation Laboratory, National Bureau of Standards. Scalings of ionograms for this purpose are being provided by ionosphere stations operated by several stations associated with CRPL. For the present, the hourly profile data from one CRPL station, Puerto Rico, are appearing in the monthly CRPL-F Reports, Part A. The very considerable task of scaling the ionograms for this purpose is being undertaken by T. R. Gilliland, Engineer in Charge, Puerto Rico Ionosphere Sounding Station; the computations are performed at the NBS Boulder Laboratories by a group headed by J. W. Wright. Basic conversion of virtual to true heights uses the well-known matrix method developed by K. G. Budden of the Cavendish Laboratory, Cambridge University, programmed by Dr. H. H. Howe for a CDC-1604 computer.

The tabulations provide the following basic electron density profile data for each hour of each day of the month:

<u>Quantity</u>	<u>Units</u>	<u>Remarks</u>
Electron Density (N)	$\times 10^3 = \text{electrons/cm}^3$	Body of table; given at each 10 km of height.
NMAX	$\times 10^3 = \text{electrons/cm}^3$	Always the highest value of N at each hour. To maintain this rule, the electron density at the next 10 km increment above HMAX is always given as exactly equal to NMAX (unless HMAX coincides with a 10 km level).
QUALification	(Alphabetic)	A standard scaling letter qualifying the observation when necessary.
KP		The standard Kp magnetic index, to one digit.
HMIN	Kilometers	The height of zero or very low electron density, obtained by linear extrapolation of the electron density vs. height curve.
SCAT	Kilometers	One half of the half-thickness of the parabola best fitting the upper portion of the F region profile. Approximates the scale height near the level HMAX.
HMAX	Kilometers	The height of maximum electron density, determined by fitting a parabola to the upper portion of the profile.
SHMAX	$\times 10^{10} = \text{electrons/cm}^2$ column.	Obtained by integration of the profile between the limits HMIN and HMAX.

Tabulations of the average electron densities each hour, at each 10 km level, for the quiet ionosphere, are also given. These averages include the profiles obtained when the magnetic character figure Kp is 4+ or less. The number of profiles entering the average for each hour is given by CNT. The other parameters of the layer, HMIN, SCAT, HMAX, SHMAX, and the mean value of Kp are given for each hour.

Before the averaging process, the individual profiles are extrapolated above HMAX by a Chapman distribution of 100 km scale height. This assumed model seems to agree well with the few published measurements dealing with the topside profile of the F-region.\* Extrapolation is necessary in order to calculate homogeneous averages near HMAX and the average profiles are, in fact, given up to 950 km. Also given are the average estimated integrated electron densities to infinity, SHINF (same units as SHMAX); this is an approximation to the total electron content in a column of the ionosphere.

\*See Wright, J. W. "A Model of the F-Region Above HMAX F2" J. Geophys. Res. V.65, pp.185-191.



## ELECTRON DENSITY

RAYMET AFR, PUERTO RICO										60 W		1 JUL 1961	
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
204P	A3	A3	A0	A0	A0	A1	A1	A1	A1	A1		F2	
HM1M									199	209	229		
SCAT									52.3	39.5	35.4		
HMAXF									311	311	325		
SHMAX									594	377	255		
EM												469	
310												46.7	
320									898	651	448		
310									898	651	448		
300									889	637	409		
290									863	603	362		
280									820	548	310		
270									762	482	240		
260									680	405	158		
250									561	318	91.5		
240									405	203	45.5		
230									240	106	12.4		
220									123	47.7			
210									57.5	12.4			
200									12.4				

## ELECTRON DENSITY

[illegible]

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO										
60 W										
3 JUL 1961										
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900 1000 1100
Q <sub>z</sub> FP	2	A2	A3	3	3	4	B4	A4	A4	A4 4
HMIN	250	210		235	280	300		110	108	106
SCAT	41.9	27.0		46.9	48.0	42.8		29.8	40.9	69.8
HMAXF	343	260		337	366	376		261	266	321
SHMAX	300	329		251	204	175		582	556	862
KM										
380						332				
370						338				
360						337				
350	6.69					329				
340	6.68			407	313	274				
330	6.52			404	290	234				681
320	6.16			393	257	163				681
310	5.69			372	212	82.7				677
300	4.95			343	152	12.4				666
290	4.16			302	84.9					648
280	3.11			249	12.4					623
270	1.92	994		176			1022	740		592
260	83.1	994		102			1022	736		552
250	12.4	957		55.8			987	711		508
240		851		25.5			897	663		461
230		650					739	594		413
220		255					560	499		369
210		12.4					400	386		336
200							289	308		313
190							238	268		296
180							214	244		285
170							194	221		277
160							168	194		268
150							140	170		254
140							121	152		218
130							111	139		186
120							105	132		166
110							62.1	43.7		156

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO										
60 W										
3 JUL 1961										
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100 2200 2300
Q <sub>z</sub> FP	A4	A4	A2	A2	A2	A1	A1	A1	A2	A2 A2 1
HMIN										249 259 289
SCAT										47.1 35.4 44.4
HMAXF										354 341 377
SHMAX										405 270 348
KM										
380										594
370										590
360										630 571
350										629 594 535
340										617 593 490
330										587 579 437
320										550 538 368
310										498 478 260
300										430 363 86.8
290										349 213 12.4
280										255 112
270										144 50.3
260										66.0 12.4
250										12.4

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO										
60 W										
4 JUL 1961										
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900 1000 1100
Q <sub>z</sub> FP	F1	F1	F2	F2	2	2	R2	A2	A3	A3 A3 3
HMIN	250	230			226	213				111
SCAT	40.5	44.9			35.8	28.5				63.9
HMAXF	327	306			407	274				325
SHMAX	327	290			184	134				834
KM										
330	6.68									654
320	6.43									653
310	6.71	5.64			381					644
300	6.74	5.61			478					620
290	6.15	6.46			460					597
280	6.17	6.16			327	351				570
270	5.62	4.72			377	350				537
260	1.17	397			210	331				503
250	12.4	236			126	291				466
240		85.7			61.1	235				429
230		12.4			23.1	137				392
220						51.5				358
210										330
200										309
190										294
180										282
170										272
160										259
150										239
140										213
130										178
120										158

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO										
60 W										
4 JUL 1961										
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100 2200 2300
Q <sub>z</sub> FP	3	3	A3	A3	A3	A5	A5	A5	6	6 6 6
HMIN	109	110							251	223 239 252
SCAT	44.9	45.0							44.7	39.1 43.5 45.5
HMAXF	323	313							360	308 343 364
SHMAX	940	1071							869	756 688 672
KM										
370										1041
360									1411	1039
350									1394	1121 1017
340									1342	1119 964
330	915								1253	1095 897
320	914	1195							1134	1041 808
310	895	1193							996	1379 955 698
300	847	1169							808	1364 849 569
290	788	1106							563	1297 719 409
280	716	1031							332	1198 577 261
270	638	936							142	1070 386 129
260	556	815							58.2	907 216 56.1
250	480	685								697 104
240	416	557								425 22.3
230	366	450								184
220	334	375								
210	312	326								
200	298	298								
190	290	282								
180	282	271								
170	274	266								
160	245	240								
150	240	243								
140	223	217								
130	188	193								
120	171	173								
110	13.5	19.7								



## ELECTRON DENSITY

[illegible]

## ELECTRON DENSITY

AFB, PUERTO RICO						60 W				6 JUL 1961			
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
0, KP	A5	A5	A3	A3	A3	2	A2	R2	251	4	4	3	
MMIN						108	SCAT		251	268	288	298	
SCAT						43.6			37.0	39.9	41.2	41.9	
HMAXF						302			354	365	368	383	
SHMAX						961			336	363	379	355	
KM													
390												610	
380												609	
370										639	678	595	
160									577	636	672	560	
350									576	617	645	514	
340									558	575	596	452	
330									516	518	532	375	
320									463	445	448	294	
310						1195			400	353	354	201	
300						1195			331	251	240	75.2	
290						1173			258	160	102		
280						1110			182	68.3			
270						1036			106	17.8			
260						940			45.4				
250						834							
240						713							
230						581							
220						449							
210						336							
200						262							
190						224							
180						208							
170						196							
160						178							
150						155							
140						131							
130						114							
120						106							
110						70.9							

## ELECTRON DENSITY

RAYE AFB, PUERTO RICO										60 W				7 JUL 1961			
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300					
OKP	A3	A3	A2	A2	A2	A1	A1	B1	B2	2	2	S2					
HMIN									229	242	259						
SCAT									42.7	34.8	41.0						
HMAXF									325	336	338						
SHMAX									461	429	442						
KW																	
340									790	815							
330									744	783	807						
320									741	739	774						
310									721	677	717						
300									677	595	639						
290									618	505	540						
280									545	402	406						
270									462	279	227						
260									373	154	29.7						
250									276	52.0							
240									158								
230									33.0								

## ELECTRON DENSITY

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QKPK									2	2	2	2
MMIN	A2	A2	A2	A2	A2	A3	A3	A3	208	228	273	255
SCAT									51.9	36.0	37.3	27.1
HMAXF									318	351	362	322
SHMAX									610	461	410	304
KW												
70											761	
360										761	761	
350										761	742	
345										744	692	
330										692	626	761
320									850	627	534	760
310									845	548	430	722
300									824	462	315	634
280									787	373	193	516
270									734	288	55.9	361
260									669	195		201
250									592	119		60.4
240									502	70.6		
230									400	37.7		
220									285	12.4		
210									152			
									33.5			

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO													
60 W 9 JUL 1961													
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	
Q <sub>z</sub> KP	2	2	4	4	4	2	R2	C2	C1	A1	A1	43	
HMIN	240	219	282	253	250	265							
SCAT	27.3	30.4	31.7	33.5	55.9	43.8							
HMAXF	302	283	354	331	361	364							
SHMAX	278	250	181	185	267	183							
KM													
370					373	295							
360					373	294							
350					385	269							
340					368	396							
330					331	306							
320					285	386							
310	704				229	358							
300	703				163	313							
290	669	610			89.4	251							
280	589	609			180	147							
270	483	583			102	91.9							
260	352	524			39.9	46.0							
250	186	431			1.7								
240	17.4	311											
230		153											
220		75.9											

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO													
60 W 9 JUL 1961													
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
Q <sub>z</sub> KP	A3	A3	1	A1	A1	A1	A1	B1	3	3	3	4	
HMIN			109						202	289	271	251	
SCAT			52.6						47.1	37.0	32.9	29.8	
HMAXF			328						307	355	346	341	
SHMAX			1161						634	401	353	388	
KM													
360										808			
350										804	775	831	
340										771	769	831	
330				1152						711	731	805	
320				1146						629	657	731	
310				1120						980	528	553	633
300				1071						976	397	421	512
290				1003						950	209	260	367
280				919						903	80.8	220	
270				827						832		111	
260				725						743		46.6	
250				620						631			
240				521						508			
230				436						366			
220				373						212			
210				333						67.8			
200				308									
190				291									
180				277									
170				263									
160				249									
150				229									
140				199									
130				178									
120				167									
110				41.7									

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO													
60 W 10 JUL 1961													
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	
Q <sub>z</sub> KP	4	4	4	4	4	3	B3	B3	B3	B3	B3	A3	
HMIN	262	227	269	210	263	214							
SCAT	34.3	42.4	40.9	36.4	36.0	43.3							
HMAXF	337	326	341	334	351	310							
SHMAX	414	474	399	463	316	327							
KM													
360					602								
350					602								
340	870			740	723	588							
330	860	812		727	722	548							
320	815	808		691	698	491							
310	733	784		633	645	417							
300	625	735		555	581	331							
290	498	667		462	516	234							
280	317	576		349	447	118							
270	96.5	470		169	372	47.3							
260		344			293	362							
250		189			212	278							
240		81.6			134	177							
230		26.5			75.4	92.5							
220					38.4	34.3							
210					3.9								

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO													
60 W 10 JUL 1961													
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
Q <sub>z</sub> KP	A3	A3	A2	A2	A2	A2	R2	R2	3	3	3	2	
HMIN									213	248	236	252	
SCAT									43.2	37.5	38.0	38.5	
HMAXF									341	346	333	341	
SHMAX									595	488	433	372	
KM													
350										870	890	675	
340										870	883	779	675
330										855	847	778	660
320										811	777	757	620
310										754	683	706	562
300										683	574	637	487
290										599	442	549	403
280										507	304	445	306
270										414	160	333	178
260										323	66.8	198	64.2
250										223	18.4	95.1	
240										135		28.3	
230										69.7			
220										31.8			

## ELECTRON DENSITY

RAYEY AFR, PUERTO RICO				60 W				11 JUL 1961				
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q <sub>MIN</sub>	2	2	1	1	1	1	1	1	1	1	81	83
H <sub>MIN</sub>	285	288	228	224	203	201	180		112	108		112
SCAT	314.7	364.2	374.0	27.2	24.5	52.5	39.2		49.9	364.2		59.4
H <sub>REF</sub>	366	358	328	305	252	305	262		246	256		325
SHMAX	316	371	438	328	332	172	169		334	452		838
KM												
370	660											
360	654	777										
350	634	767										
340	651	773										
330	467	655	793									672
320	374	558	783									671
310	265	434	747	801		231						661
300	134	265	677	795		230						642
290	374.5	874.4		590	760	226						610
280			478	639		218						574
270			358	496		204	224					534
260		223	332	1100	189	223				549		493
250		115	185	1098	172	218			394	545		449
240		55.6	84.8	1034	151	205			392	522		408
230		174.2	33.1	864	131	187			383	477		373
220				547	110	167			362	427		343
210				118	85.1	142			342	374		323
200						118			318	330		309
190						95.7			288	297		284
180						77.6			251	273		291
170						67.1			220	252		288
160						52.7			190	230		272
150						45.0			162	208		250
140						39.0			136	181		218
130						37.2			114	149		182
120						35.8			106	134		155
110						32.1				101		
100						21.5						

## ELECTRON DENSITY

RAYME AFR. PUERTO RICO										60 W				11 JUL 1961			
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300					
QAPD									2	2							
HMIN	83	83	83	83	83	82	A2	B2	218	259	C2	C1					
SCAT									39.5	39.7							
HMAXF									327	354							
SHMAX									647	503							
KW																	
260										894							
260										891							
260										865							
330									1126	807							
320									1116	725							
310									1072	620							
300									991	498							
290									878	357							
280									743	220							
270									582	86.6							
260									405	12.4							
250									241								
240									124								
230									57.9								
220									17.2								

## ELECTRON DENSITY

[illegible]

## ELECTRON DENSITY

RAYE AFR. PUERTO RICO					60 W					12 JUL 1961				
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300		
QKPK	RO	RO	RI	RI	1	0	0	0	0	0	0	1		
HMIN					111	110	SCAT		203	249	262	288		
					52.7	50.0			44.9	38.1	37.0	41.0		
HMAXF					347	348			925	339	358	378		
SHMAX					1164	1161			563	417	341	366		
KM												648		
380												642		
370												618		
360												619		
350					1100	1234						611		
340					1095	1227				754	581	512		
330					1070	1196			779	744	527	434		
320					1018	1141			777	703	463	346		
310					958	1058			759	647	388	240		
300					887	961			721	573	300	110		
290					805	852			662	480	196	20.7		
280					720	737			600	367	104			
270					631	615			531	234	37.8			
260					543	503			459	125				
250					459	402			387	23.2				
240					390	328			315					
230					334	281			237					
220					298	254			161					
210					278	237			64.2					
200					267	226								
190					260	214								
180					251	196								
170					236	172								
160					208	150								
150					180	135								
140					167	125								
130					151	119								
120					145	115								
110						49.4								

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO													
60 W 13 JUL 1961													
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	
Q <sub>z</sub> KP	1	1	1	1	1	6	86	86	88	8	88	88	
HMIN	291	259	202	216	221	248				112			
SCAT	35.3	32.5	29.1	33.8	39.0	35.9				46.9			
HMAXF	361	334	268	284	324	329				264			
SHMAX	308	324	233	170	168	136				441			
KM													
370	636												
360	636												
350	621												
340	579	707											
330	517	704			292	274							
320	417	673			291	270							
310	317	606			283	254							
300	217	521			265	229							
290		412			364	237	195						
280		254			363	200	151						
270		103	599	348	161	93.6				452			
260		22.0			587	316	122	47.8					
250					540	275	81.9	15.8					
240					461	220	50.9			419			
230					342	145	27.0			394			
220					150	58.7				367			
210					52.8					342			
200										320			
190										302			
180										283			
170										259			
160										234			
150										208			
140										180			
130										148			
120										131			

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO													
60 W 13 JUL 1961													
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
Q <sub>z</sub> KP	88	88	88	88	88	A6	A6	86	5	5	5	3	
HMIN				108	111				210	246	279	248	
SCAT				58.1	38.6				42.4	38.0	33.4	31.9	
HMAXF				404	364				342	363	377	338	
SHMAX				1764	1533				753	674	569	575	
KM													
410				1411									
400				1409									
390				1391									
380				1352								1041	
370				1286	1768						1121	1028	
360				1209	1762						1119	959	
350				1128	1707						1100	1087	871
340				1035	1583						1100	1011	764
330				936	1431						1080	910	635
320				838	1268						1019	792	495
310				746	1095						947	656	350
300				661	923						858	520	211
290				583	765						761	380	100
280				513	625						654	243	22.1
270				454	508						534	135	177
260				408	421						388	66.4	73.8
250				371	359						258	26.0	20.5
240				342	319						170		
230				321	294						96.9		
220				309	277						43.7		
210				302	267						3.1		
200				296	258								
190				290	249								
180				284	237								
170				273	223								
160				255	208								
150				227	190								
140				195	167								
130				168	147								
120				155	138								
110				137									

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO													
60 W 14 JUL 1961													
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	
Q <sub>z</sub> KP	3	3	7	7	7	8	88	88	7	7	A7	87	
HMIN	201	200	251	303	258	201			111	104			
SCAT	28.7	33.8	54.8	41.6	43.5	32.5			70.8	50.9			
HMAXF	280	271	368	379	348	273			346	294			
SHMAX	439	207	207	143	151	105			472	414			
KM													
380				268									
370				270	265								
360				269	254								
350				263	236	258			300				
340				242	209	256			370				
330				236	173	246			296				
320				218	130	230			290				
310				197	65.7	207			278				
300				170	176				267	314			
290	1027			142	140				255	314			
280	1027	456	111		100	243			242	308			
270	993	456	79.0		57.7	242			229	293			
260	896	443	41.4		17.8	233			218	277			
250	753	409				213			208	261			
240	575	361				176			202	246			
230	373	291				121			198	233			
220	181	192				69.6			194	223			
210	59.4	79.3				34.8			191	216			
200									188	214			
190									184	211			
180									179	209			
170									167	207			
160									149	203			
150									129	191			
140									111	168			
130									101	142			
120									95.8	129			
110										117			

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO									60 W			14 JUL 1961		
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300		
Q <sub>z</sub> KP	B7	B7	86	6	A6	A4	A4	84	A3	A3	A3	A5		
HMIN				100					321	278	300	282		
SCAT				46.0					39.8	34.4	35.4	38.9		
HMAXF				287					409	377	377	391		
SHMAX				490					160	191	165	181		
KM														
410									281					
400									278			295		
390									266			295		
380									244	343	328	289		
370									217	340	324	273		
360									186	318	306	247		
350									149	291	280	218		
340									104	257	243	186		
330									47.9	216	199	149		
320										168	143	112		
310										122	79.6	78.1		
300										77.9	12.4	48.6		
290				47.6						43.0		25.5		
280				42.4						16.5				
270				41.2										
260				38.9										
250				35.8										
240				32.6										
230				29.8										
220				27.7										
210				26.2										
200				25.4										
190				24.7										
180				24.2										
170				23.8										
160				22.3										
150				20.0										
140				17.9										
130				16.3										
120				15.4										
110				14.7										
100				12.4										

## ELECTRON DENSITY

RAMFAY AER, PUERTO RICO

60 W

15 JUL 1961

TIME 0000 0100 0200 0300 0400 0500 0600 0700 0800 0900 1000 1100

[illegible]

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

604

15 JUL 1961

TIME 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300

WVF	B2	B2	R5	5	A5	A5	5	6	6	6	6
WVF				105		113		245	231	252	296
SCAT				51.4		51.5		45.4	48.6	53.1	41.0
HMAXF				32.0		32.0		36.3	35.8	36.1	37.5
HMAX				98.2		76.3		58.1	64.8	63.0	40.3
KM											
3A0											902
370								894		915	871
360								893	932	919	871
350								875	926	905	815
340								835	900	879	734
330						761		770	856	833	624
320				1017		755		690	790	777	496
310				1008		735		588	708	699	332
300				979		697		475	610	596	153
290				910		652		362	500	471	
280				864		599		238	388	319	
270				775		542		135	253	182	
260				670		484		68.2	146	81.0	
250				562		427		28.1	80.9		
240				454		373			38.3		
230				370		325					
220				319		282					
210				295		245					
200				212		214					
190				274		188					
180				263		166					
170				267		146					
160				222		127					
150				199		110					
140				181		95.0					
130				172		86.3					
120				166		80.7					
110				101							

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

16 JUL 1961

TIME 0000 0100 0200 0300 0400 0500 0600 0700 0800 0900 1000 1100

[illegible]

## ELECTRON DENSITY

RAMEY AFR, PUERTO RICO

60 W

16 JUL 1961

TIME 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300

[illegible]

## ELECTRON DENSITY

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

17 JUL 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QKP	F3	3	2	2	2	4	R4	A4	4	A4	B4	B2
HMIN	298	241	237	239	268	224			111			
SCAT	38.3	39.0	29.1	17.8	43.3	33.7			47.7			
HMAXF	381	329	310	316	360	307			279			
SHMAX	306	280	179	161	173	137			471			
KM												
300	536											
380	536											
370	425				296							
360	493				296							
350	448				292							
340	395				280							
330	317	527			260							
320	270	520			303	231						
310	195	497	436		107	192	283					
300	87.6	456	424	295	149	279						
290		397	385	272	105	264						
280		317	321	238	56.4	236			501			
270		232	238	198	16.8	199			496			
260		146	133	150		152			481			
250		55.3	62.9	93.5		95.8			452			
240			21.5	22.5		53.3			419			
230						26.4			381			
220									341			
210									304			
200									273			
190									244			
180									217			
170									196			
160									177			
150									156			
140									136			
130									117			
120									109			

RAMEY AFB, PUERTO RICO

60 W

17 JUL 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QKP	B2	B2	B4	A6	B6	A6	A6	A6	A5	5	5	6
HMIN					111	109			225	236	251	219
SCAT					55.9	55.3			35.2	37.0	40.6	40.4
HMAXF					339	395			313	334	354	335
SHMAX					1234	1329			717	639	624	578
KM												
400					1051							
390					1048							
380					1031							
370					997							
360					938						1075	
350					881						1073	
340					1168	821					1152	1044
330					1160	740					1148	979
320					1133	698					1417	1110
310					1087	637					1414	1025
300					1019	578					1366	914
290					944	522					1255	774
280					861	471					1107	624
270					768	424					917	463
260					672	383					702	299
250					578	348					441	131
240					492	319					163	22.1
230					417	296					41.0	
220					363	275						
210					326	257						
200					300	240						
190					292	224						
180					267	208						
170					250	193						
160					224	177						
150					195	155						
140					168	133						
130					152	119						
120					143	111						
110						56.4						

## ELECTRON DENSITY

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

18 JUL 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QKP	6	6	A6	6	6	F5	A5	B5	B8	B8	B8	B7
HMIN	317	270	210	267	264	247						
SCAT	34.7	34.8	35.8	37.5	39.5	31.5						
HMAXF	384	339	272	363	374	329						
SHMAX	528	651	487	372	397	324						
KM												
300	1095											
380	1092				675							
370	1052				654	674						
360	967				653	655						
350	856				634	613						
340	714	1470			589	554						
330	515	1448			535	477	660					
320	268	1365			463	390	646					
310		1221			380	292	596					
300		1006			292	201	522					
290		649			194	124	428					
280		267	1173	97.5	65.4	335						
270		12.4	1172	26.0	28.3	239						
260			1141			151						
250			1066			56.5						
240			922									
230			647									
220			272									
210			12.4									

RAMEY AFB, PUERTO RICO

60 W

18 JUL 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QKP	B7	B7	B6	R6	B6	A6	B6	A6	6	6	6	5
HMIN					111				221	270	271	269
SCAT					67.7				57.5	41.7	46.5	38.4
HMAXF					349				366	382	394	356
SHMAX					1186				703	575	679	555
KM												
400											1008	
390											894	1006
380											894	985
370											854	875
360											851	831
350											836	760
340					932						809	674
330					928						765	582
320					914						714	481
310					890						650	373
300					857						575	262
290					812						492	167
280					757						406	88.9
270					694						316	12.4
260					626							
250					559						230	
240					495						145	
230					441						79.1	
220					399						37.2	
210					349							
200					335							
190					323							
180					311							
170					295							
160					273							
150					247							
140					222							
130					199							
120					184							

ELECTRON DENSITY													
RAMEY AFB, PUERTO RICO													
60 W 19 JUL 1961													
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	
O <sub>1</sub> VP	85		1	1	1	0	A0	A0	R2	B2	A2	A1	
HMIN	269	211	280	243	221				107				
SCAT	41.0	34.0	43.8	33.2	20.5				29.5				
HMAXF	376	305	366	313	251				259				
SHMAX	565	405	434	380	144				408				
KM													
300	028												
370	027			775									
360	004			772									
350	035			750									
340	761			708									
330	654			646									
320	455			450	854								
310	435	740	439	853									
300	298	736	285	823									
290	162	703	122	754									
280	63.5	637	12.4	646									
270	12.4	560		492									
260		474		317	501			648					
250		376		114	590			634					
240		282			546			585					
230		187			430			494					
220		77.4						372					
210								267					
200								232					
190								217					
180								200					
170								173					
160								150					
150								131					
140								118					
130								108					
120								102					
110								96.9					

ELECTRON DENSITY													
RAMEY AFB, PUERTO RICO													
60 W 19 JUL 1961													
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
O <sub>1</sub> KP	A1	A1	B1	A1	A1	A1	A1	A1	2	A2	B2	F3	
HMIN					111				207	233		242	
SCAT					40.4				37.8	37.9		32.1	
HMAXF					295				313	332		337	
SHMAX					606				437	347		241	
KM													
240										624		454	
330										624		449	
320										768	607	418	
310										767	568	379	
300					654					745	512	336	
290					651					693	441	282	
280					631					624	359	209	
270					588					535	257	136	
260					536					431	155	76.9	
250					473					320	77.5	35.0	
240					404					210	33.3		
230					343					117			
220					298					56.5			
210					272					19.9			
200					259								
190					250								
180					242								
170					233								
160					218								
150					194								
140					167								
130					148								
120					138								

ELECTRON DENSITY													
RAMEY AFB, PUERTO RICO													
60 W 20 JUL 1961													
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	
O <sub>1</sub> KP	F3	F3	F3	F3	F3	F2	A2	2	2	A2	A2	A3	
HMIN	269	240			242	103	100						
SCAT	41.4	39.1			43.3	25.9	40.2						
HMAXF	373	343			328	228	240						
SHMAX	275	315			219	227	369						
KM													
300	444												
370	444												
360	434												
350	408		527										
340	375		526										
330	337		513		383								
320	286		478		366								
310	230		437		341								
300	166		384		310								
290	107		322		268								
280	55.3		258		213								
270	12.4		192		140								
260			117										
250			50.8		56.9			478					
240			1.7					478					
230								338	470				
220								388	444				
210								349	411				
200								285	367				
190								234	321				
180								194	281				
170								161	245				
160								132	211				
150								105	177				
140								83.7	145				
130								73.7	122				
120								68.2	109				
110								65.7	102				
100									31.1				

ELECTRON DENSITY													
RAMEY AFB, PUERTO RICO													
60 W 20 JUL 1961													
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
O <sub>1</sub> KP	B3	B3	B4	B4	B4	B5	B5	B5	5	5	S5	6	
HMIN									238	219	240	238	
SCAT									38.4	36.5	34.8	35.7	
HMAXF									346	332	330	342	
SHMAX									642	641	530	663	
KM													
350									1075			1179	
340									1069	1173		1178	
330									1030	1173	1022	1145	
320									952	1144	1002	1058	
310									851	1067	937	965	
300									737	954	840	812	
290									605	811	732	678	
280									470	643	590	521	
270									335	450	405	348	
260									201	272	226	187	
250									85.9	155	81.3	76.2	
240									19.3	83.8		19.3	
230										41.8			
220										12.4			



## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO												
60 W 21 JUL 1961												
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q <sub>z</sub> KP	6	6	6	6	A6	3	A3	A3	A3	B3	B3	B4
HMIN	288	272	260	258	286	280						
SCAT	38.1	48.2	38.3	49.2	43.4	48.9						
HMAXF	381	374	347	364	359	375						
SHMAX	715	821	607	588	408	322						
KM												
300	1251											
380	1251	1292				501						
370	1277	1290			870	499						
360	1151	1265			869	779	489					
350	1050	1211	1179		853	771	467					
340	926	1131	1169	818	742	437						
330	788	1019	1122	766	692	396						
320	641	866	1035	700	621	344						
310	489	681	902	610	514	282						
300	310	476	727	508	359	205						
290	65.3	276	505	403	75.2	104						
280		98.2	283	294								
270			101	151								
260			12.4	30.1								

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO												
60 W 21 JUL 1961												
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q <sub>z</sub> KP	B4	A4	A4	A4	A4	A3	A3	A3	3	3	3	3
HMIN									257	266	251	259
SCAT									35.3	43.6	35.1	31.9
HMAXF									353	376	361	329
SHMAX									429	541	460	332
KM												
380										874		
370										870	831	
360									804	845	831	
350									802	794	812	
340									775	726	756	
330									715	638	678	744
320									627	530	579	728
310									527	399	462	672
300									410	276	345	589
290									293	162	239	482
280									175	74.8	146	344
270									76.9	26.3	79.2	159
260									25.1		38.7	28.5

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO												
60 W 22 JUL 1961												
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q <sub>z</sub> KP	3	3	4	R4	F4	F3	R3	3	A3	B3	B3	C3
HMIN	250	207	220			284		127				
SCAT	25.8	38.0	41.6			41.4		34.3				
HMAXF	315	312	326			375		290				
SHMAX	253	300	284			255		603				
KM												
380						446						
370						444						
360						432						
350						404						
340						366						
330						314						
320	657	546	496			256						
310	651	546	480			194						
300	590	532	457			108		990				
290	512	497	401			35.5		989				
280	399	445	336					966				
270	259	373	254					900				
260	105	290	173					797				
250	12.4	201	107					653				
240		128	62.4					491				
230		76.3	32.3					362				
220		40.8						269				
210		16.2						213				
200								178				
190								150				
180								126				
170								103				
160								86.9				
150								78.2				
140								73.6				
130								65.7				

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO												
60 W 22 JUL 1961												
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q <sub>z</sub> KP	C3	C3	C1	C1	C1	A1	A1	A1	1	1	1	1
HMIN									227	226	227	256
SCAT									31.9	38.8	41.0	38.8
HMAXF									313	310	343	349
SHMAX									667	625	686	575
KM												
350										1126	1070	
340										1124	1056	
330										1095	1006	
320										1417	1179	1028
310										1414	1179	939
300										1358	1159	826
290										1276	1100	686
280										1055	1000	535
270										834	871	374
260										586	713	233
250										339	511	124
240										111	254	59.4
230										27.3	62.5	20.6

## ELECTRON DENSITY

23 JUL 1961

[illegible]

## ELECTRON DENSITY

34 JULY 1963

[illegible]

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO												
60 W 25 JUL 1961												
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q <sub>z</sub> KP	1	3	3	3	3	3	B3	C3	C2	B2	A2	A2
HMIN	244	288	213	211	218	220						
SCAT	35.2	27.3	35.2	42.0	41.5	39.9						
HMAXF	338	344	303	330	319	299						
SHMAX	506	423	443	518	401	371						
KM												
350		1085										
340	1008	1079		834								
330	994	1004		834								
320	932	887		822	704							
310	844	730	902	786	695							
300	716	499	901	726	667	737						
290	659	123	873	642	617	727						
280	366		805	546	545	695						
270	191		713	431	455	642						
260	88.2		588	317	347	550						
250	33.1		307	211	218	421						
240			221	133	113	248						
230			102	75.0	52.1	103						
220			37.8	37.1	16.8	12.4						

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO												
60 W 25 JUL 1961												
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q <sub>z</sub> KP	A2	A2	A2	A2	A2	B2	2	B2	A4	4	4	4
HMIN	110	109				208	211	235	302			
SCAT	49.3	40.0				37.2	50.2	32.6	38.8			
HMAXF	309	298				307	341	331	399			
SHMAX	1180	956				550	668	387	381			
KM												
400												688
390												679
380												644
370												593
360												523
350										936		433
340										936	751	320
330										925	750	204
320										895	728	109
310										843	658	40.7
300						1477		990				
290						1465	1379	982	780	590		
280						1422	1364	930	699	496		
270						1348	1308	862	602	394		
260						1246	1205	767	492	279		
250						1118	1081	653	373	148		
240						952	936	527	246	73.3		
230						766	760	375	141	28.6		
220						587	573	172	74.7			
210						420	416	69.5	35.7			
200						314	291	17.8				
190						258	222					
180						232	184					
170						213	159					
160						191	138					
150						166	120					
140						145	104					
130						126	89.8					
120						112	78.8					
110						105	72.9					
						12.4	35.7					

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO												
60 W 26 JUL 1961												
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q <sub>z</sub> KP	4	4	2	2	2	2	B2	B2	B2	A2	A2	B1
HMIN	259	263	252	258	250	216						
SCAT	33.8	43.6	44.0	34.3	34.1	24.3						
HMAXF	353	348	347	331	326	275						
SHMAX	419	470	493	369	360	216						
KM												
360	815											
350	814	838	854									
340	785	831	869	754								
330	718	803	823	754	779							
320	629	755	774	736	774							
310	522	675	705	684	738							
300	399	568	605	609	670							
290	272	440	474	513	566							
280	147	270	321	397	422	654						
270	58.2	117	174	257	257	647						
260	12.4		59.6	92.2	107	592						
250					12.4	479						
240						299						
230						132						
220						30.0						

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO												
60 W 26 JUL 1961												
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q <sub>z</sub> KP	A1	A1	A5	A5	A5	A5	A5	B5	4	4	4	4
HMIN						109			299	292	257	272
SCAT						48.7			43.6	33.3	46.9	34.8
HMAXF						301			306	370	363	348
SHMAX						776			527	500	615	457
KM												
400									858			
390									854			
380									830			
370									782	1003	976	
360									714	981	975	
350									630	908	958	954
340									532	810	918	941
330									416	688	858	885
320									293	546	771	801
310						923			138	380	652	682
300						923			22.3	192	510	530
290						912					366	307
280						881					232	134
270						828					99.2	
260						761					25.5	
250						676						
240						572						
230						463						
220						358						
210						286						
200						244						
190						221						
180						202						
170						181						
160						153						
150						130						
140						118						
130						112						
120						106						
110						22.3						



## ELECTRON DENSITY

RAYE AFR. PUERTO RICO						60 W				29 JUL 1961			
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
Q <sub>1</sub> FR	81	81	82	82	A2	A2	A2	A2	2	2	2	2	
H <sub>1</sub> MT						100			239	232	272	269	
SCAT						46.7			26.6	38.9	30.5	33.6	
HMAXF						305			310	319	355	357	
SHMAX						74.8			311	342	274	266	
KM													
340											569	501	
350											566	495	
360											530	467	
370											477	422	
320										619	409	364	
310						866			751	611	327	298	
300						863			724	581	236	224	
290						863			646	533	166	155	
280						803			547	468	52.8	93.3	
270						744			410	389		42.2	
260						669			264	297		3.1	
250						584			128	197			
240						494			22.8	97.7			
230						405							
220						325							
210						276							
200						244							
190						221							
180						199							
170						177							
160						151							
150						128							
140						112							
130						104							
120						99.9							
110						274.2							

## ELECTRON DENSITY

RAMFY AFR, PUERTO RICO				60 W				30 JUL 1961				
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q.FKD	R1	R1	H2	H2		A2	A2	2	12	A1	A1	A1
Q.FMIN	109	108	106	107				106	100	203	241	259
SCAT	51.7	41.3	40.2	34.5				41.7	53.0	51.8	44.1	44.9
HMMF	34.1	44.4	35	38.1				292	290	324	350	381
SHMX	1162	1287	1334	1700				1000	919	629	488	466
KM												
360										775	819	
350	1060									775	819	
340	1060	1450								765	808	
330	1048	1446	1657						858	735	777	
320	1017	1407	1651						856	684	723	
310	961	1321	1599	1784					842	617	652	651
300	893	1203	1489	1784			1477		811	536	559	645
290	808	1058	1342	1741			1476	1298	764	445	419	613
280	726	899	1159	1623			1446	1287	701	335	189	553
270	666	747	960	1435			1374	1253	623	211	76.2	475
260	598	621	840	1297			1257	1196	537	106	12.4	380
250	496	517	594	954			1110	1120	443	42.8		267
240	429	438	472	702			922	1003	350			180
230	380	382	393	504			711	845	253			59.0
220	344	342	347	384			515	659	123			12.4
210	324	318	320	319			355	437	43.9			
200	310	300	303	289			263	253				
190	301	287	290	273			197	144				
180	288	279	280	255			166	85.0				
170	272	272	272	245			143	59.1				
160	246	262	251	238			123	45.8				
150	245	248	223	212			105	39.7				
140	238	226	202	192			95.2	36.2				
130	216	202	178	176			77.2	35.1				
120	174	175	162	155			69.2	33.5				
110	41.7	42.4	99.7	92.8			52.0	30.2				
100							19.7					

## ELECTRON DENSITY

RAMFAY AFB, PUERTO RICO

60 W

31 JUL 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q <sub>z</sub> FP	1	F1	1	1	1	2	R2	2	3	A3	3	2
HMIN	236	255	217	229	216	237		110	109	113	111	107
SCAT	36.0	29.2	35.8	36.7	40.4	41.6		28.2	38.6	48.1	64.7	59.2
HMAXF	311	331	289	307	312	318		231	242	253	280	299
SHMAX	244	257	282	236	179	151		217	329	405	527	706
FM												
340		677										
330		627										
320	517	606			310	284						
310	517	547		467	310	282						
300	506	468		463	303	271						
290	471	326	639	443	287	253						
280	418	165	628	406	262	226						
270	337	73.5	593	353	231	186				503	628	
260	231	29.4	532	288	194	132						
250	117		428	208	149	70.1						
240	36.4		258	174	90.2	24.0						
230			96.3	25.9	46.4							
220			25.5		18.8							
210												
200												
190												
180												
170												
160												
150												
140												
130												
120												
110												

## ELECTRON DENSITY

RAMFAY AFB, PUERTO RICO

60 W

31 JUL 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q <sub>z</sub> FP	2	R2	2	2	A2	A2	A2	A2	A3	A3	A3	A3
HMIN	109	110	111	110					200	219	268	299
SCAT	59.9	56.1	57.0	59.3					48.5	56.0	58.5	46.2
HMAXF	311	319	325	336					308	341	383	399
SHMAX	863	964	1036	1082					465	413	399	354
FM												
400												583
390												541 577
380												541 559
370												535 526
360												521 480
350												
340												
330												
320	779	941	983	963								
310	779	935	969	934								
300	772	914	939	891								
290	754	878	895	833								
280	776	827	834	764								
270	684	761	759	688								
260	637	682	672	607								
250	607	593	581	526								
240	622	500	499	455								
230	459	415	428	395								
220	402	356	370	348								
210	353	318	330	313								
200	320	296	305	290								
190	296	283	280	275								
180	280	276	275	266								
170	267	264	260	259								
160	256	238	251	239								
150	244	208	233	213								
140	224	185	198	183								
130	174	174	172	159								
120	162	153	156	149								
110	33.1	12.4		12.4								

KP BELOW 4.5

AVERAGE ELECTRON DENSITY

PAMEY AFB, PUERTO RICO

60 W

JUL 1961

KP BELOW 4.5

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
COUNT	25	24	23	22	24	26	2	8	10	6	4	6	2.4	2.2	2.3	3	5	5	3	2	22	24	23	23
KP	2.6	2.6	2.5	2.5	2.6	2.5	2.0	2.2	2.6	2.7	2.5	2.7	2.4	2.2	2.3	2.7	2.2	1.8	2.3	2.5	2.4	2.4	2.5	2.7
HMIN	259	242	234	236	244	247	100	110	109	109	110	109	109	109	108	108	111	109	111	100	230	246	260	270
RATIO	6.6	7.1	6.7	6.6	6.6	6.6	5.1	5.5	4.7	4.4	4.0	3.4	3.5	3.9	4.0	4.5	4.4	4.6	4.6	4.8	5.7	5.8	6.1	6.3
SCAT	36.0	35.0	36.3	37.2	39.1	38.9	41.2	37.7	41.6	44.0	55.8	62.0	54.3	49.7	47.5	45.5	42.6	44.6	38.9	45.6	42.3	41.6	39.6	37.7
NMAX	715	725	641	535	484	405	448	601	636	724	650	657	932	1108	1246	1339	1181	1340	1387	1204	842	748	690	718
HMAX	346	323	318	320	331	328	274	266	268	272	280	313	329	323	325	318	311	310	293	311	334	348	354	360
SHMAX	367	342	325	275	252	210	293	409	488	601	641	792	1030	1073	1157	1115	972	1030	917	904	515	442	386	383
SHINE	2389	2132	1784	1616	1353	1557	2103	2282	2644	2586	2646		3660	4198	4672	4891	4303	4812	4829	4301	2890	2553	2332	2408
KM	57.1	52.2	45.2	38.4	36.2	30.0	25.9	34.3	35.8	41.4	39.6	44.9	69.6	80.0	90.2	92.0	80.6	89.3	85.5	81.2	63.1	60.5	57.5	61.9
900	73.3	67.0	57.9	49.3	46.4	38.5	33.2	44.0	45.9	53.2	50.9	57.6	89.3	103	116	151	133	115	110	104	81.0	77.6	73.8	79.5
850	94.0	86.0	74.3	63.2	59.5	49.4	42.6	56.5	58.9	68.2	65.3	73.9	114	132	148	151	133	147	141	134	104	99.6	94.6	102
800	120	110	95.3	81.0	76.3	63.3	54.7	72.5	75.6	87.5	83.7	94.8	147	169	190	194	170	188	181	171	133	128	121	130
750	154	141	122	104	97.7	81.0	70.1	92.9	96.9	112	107	121	188	216	244	249	218	241	231	219	170	163	155	167
700	197	180	155	133	125	103	89.7	119	124	144	137	155	240	276	311	318	279	309	296	281	218	208	198	213
650	250	230	190	169	159	132	115	152	159	183	176	198	306	352	397	405	355	394	378	358	277	265	251	270
600	316	291	252	214	201	167	146	193	202	234	224	251	405	466	503	515	451	500	481	454	351	335	317	340
550	395	365	317	269	252	209	185	245	256	296	283	317	550	586	633	648	568	630	609	573	440	418	396	424
500	486	452	393	333	311	258	232	307	321	372	356	394	602	696	785	807	707	785	762	713	544	514	486	517
490	504	471	410	347	323	269	243	321	336	389	372	411	627	725	818	841	737	819	796	744	566	534	505	536
480	524	490	427	361	336	279	254	335	341	406	389	428	652	755	851	876	768	853	831	775	588	555	523	555
470	543	509	443	375	349	290	265	349	366	424	406	446	677	785	885	912	799	888	866	806	611	575	542	574
460	562	528	461	390	362	300	276	364	382	442	423	464	702	815	919	948	831	924	903	838	633	595	560	593
450	580	547	478	404	374	311	288	379	398	461	441	481	728	845	953	984	862	960	940	871	656	614	578	611
440	598	566	495	418	387	321	300	395	414	480	460	499	753	875	987	1020	924	996	977	903	678	634	596	628
430	616	585	512	432	399	332	312	410	431	499	478	517	777	905	1020	1057	926	1032	1015	935	699	652	612	644
420	633	603	528	446	411	342	324	426	448	518	497	535	801	934	1053	1092	957	1067	1053	967	720	670	628	659
410	648	621	544	459	422	351	336	441	465	538	516	569	824	962	1084	1127	988	1102	1090	999	740	686	642	673
400	662	638	560	471	432	360	348	457	482	558	534	569	846	989	1115	1161	1018	1137	1128	1029	759	701	655	684
390	675	653	574	483	442	368	360	472	499	577	553	585	866	1014	1143	1193	1046	1169	1164	1058	776	714	666	692
380	683	667	588	494	450	375	372	488	515	596	571	600	884	1037	1169	1223	1073	1200	1200	1086	790	725	675	696
370	688	678	600	503	456	381	384	502	531	615	589	614	899	1058	1192	1251	1097	1229	1234	1111	800	733	680	694
360	689	687	610	511	460	384	395	516	547	633	606	626	912	1075	1212	1276	1119	1255	1266	1134	808	735	679	683
350	691	693	617	517	461	383	405	529	562	650	623	636	922	1090	1238	1296	1138	1278	1295	1153	811	730	670	661
340	693	692	621	518	457	380	415	542	575	665	638	645	928	1099	1239	1313	1152	1296	1322	1170	809	713	648	626
330	694	691	618	519	447	371	424	552	588	680	652	651	925	1104	1245	1324	1159	1306	1345	1181	797	681	608	574
320	696	693	619	520	447	371	424	552	588	680	652	651	911	1094	1242	1327	1158	1307	1363	1176	773	633	549	503
310	698	694	620	521	448	372	425	553	589	692	664	654	880	1061	1212	1320	1149	1299	1377	1148	738	569	478	421
300	700	696	621	522	449	373	426	554	590	693	665	655	835	1009	1146	1294	1123	1280	1384	1054	688	491	390	323
290	702	698	622	523	450	374	427	555	591	694	666	656	778	936	1080	1234	1088	1244	1382	1075	622	402	293	227
280	704	700	623	524	451	375	428	556	592	695	667	657	716	851	951	1138	986	1184	1346	1044	545	312	192	146
270	706	702	624	525	452	376	429	557	593	696	668	658	648	759	951	1138	986	1184	1346	1044	545	312	192	146
260	708	704	625	526	453	377	430	558	594	697	669	659	579	663	706	858	758	982	1144	904	359	152	54.6	35.4
250	710	706	626	527	454	378	431	559	595	698	670	660	512	568	588	701	626	841	1000	817	262	91.0	21.7	14.6
240	712	708	627	528	455	379	432	560	596	699	671	661	452	481	488	552	502	683	820	703	168	45.6	7.6	6.4
230	714	710	628	529	456	380	433	561	597	700	672	662	402	409	413	434	404	530	622	570	100	16.5	1.4	2.6
220	716	712	629	530	457	381	434	562	598	701	673	663	363	358	360	358	337	392	447	434	53.0	5.7		
210	718	714	630	531	458	382	435	563	599	702	674	664	334	324	326	313	298	300	310	239	18.3			
200	720	716	631	532	459	383	436	564	599	703	675	665	315	304	305	289	276	252	227	174	1.1			
190	722	718	632	533	460	384	437	565	599	704	676	666	302	291	291	275	262	226	182	107				
180	724	720	633	534	461	385	438	566	599	705	677	667	291	283	279	264	250	206	153	68.9				
170	726	722	634	535	462	386	439	567	599	706	678	668	280	276	268	251	236	186	127	51.9				
160	728	724	635	536	463	387	440	568	599	707	679	669	269	269	264	253	226	215	162	108	43.1			
150	730	726	636	537	464	388	441	569	599	708	680	670	258	254	244	232	203	190	140	93.5	38.8			
140	732	728	637	538	465	389	442	570	599	709	681	671	247	231	219	205	181	166	123	84.0	36.7			
130	734	730	638	539	466	390	443	571	599	710	682	672	236	231	219	195	182	164	150	112	73.4	35.3		
120	736	732	639	540	467	391	444	572	599	711	683	673	225	220	210	188	152	141	106	68.1	33.6			
110	738	734	640	541	468	392	445	573	599	712	684	674	214											





# TABLES OF IONOSPHERIC DATA

MAY 1961 - MARCH 1959

Table 1

Washington, D. C. (38.7° N, 77.1° W)							
May 1961							
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00	4.65	28	275				2.90
01	4.5	27	270				2.90
02	4.1	28	275				2.85
03	3.8	30	275				2.85
04	3.35	30	280				2.90
05	3.6	29	270	---	---	---	3.10
06	(260)	4.4	31	240	---	111 2.15	>2.3
07	320	5.15	30	225	3.8	105 2.60	2.9
08	340	5.5	29	215	4.2	103 3.00	3.4
09	350	5.55	28	210	4.4	103 3.20	3.6
10	380	5.6	29	200	4.6	105 3.30	3.9
11	<375	6.0	31	200	4.6	103 3.48	3.9
12	380	6.0	31	205	4.7	103 (3.50)	4.0
13	360	6.1	31	210	4.7	103 3.50	3.8
14	350	6.2	31	210	4.6	105 3.40	3.6
15	350	6.2	31	220	4.5	105 3.30	3.7
16	325	6.2	31	<230	4.4	105 3.10	3.6
17	305	6.4	29	230	4.0	109 2.75	3.1
18	270	6.65	30	245		113 2.30	2.8
19	(270)	6.7	31	250			2.5
20		6.6	31	240			2.9
21		6.0	31	255			2.95
22		5.6	29	265			2.90
23		5.25	28	270			2.90

Time: 75.0°W.  
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 2

Talara, Peru (4.6° S, 81.3° W)							
May 1961							
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		7.0	26	220			3.15
01		6.8	30	230			3.20
02		6.4	30	240			3.20
03		5.3	31	230			3.30
04		4.25	30	230			3.20
05		3.3	28	255			3.15
06		3.2	28	(270)			3.00
07		5.8	30	250	121 2.15		3.15
08		7.5	31	225	115 2.80		2.90
09		8.4	30	215	109 3.15	3.4	2.55
10	---	8.65	30	200	(4.8) 109 3.42	3.7	2.40
11	360	9.0	29	200	4.8 109 3.55	3.8	2.30
12	375	9.25	30	200	4.9 109 3.65	3.8	2.25
13	370	9.2	30	200	4.8 109 3.60	3.8	2.25
14	(375)	9.25	30	200	4.8 109 3.50	3.9	2.40
15	---	9.4	30	200	4.7 109 3.30		2.50
16		9.5	30	200			2.50
17		9.6	30	230	(117) 2.60		2.50
18		(9.45)	30	260	<142 1.90	2.2	(2.50)
19		9.25	30	300			2.52
20		>8.65	30	310			2.60
21		8.9	27	290			2.75
22		9.3	26	250			3.08
23		8.9	25	220			3.35

Time: 75.0°W.  
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 3

Huancayo, Peru (12.0° S, 75.3° W)							
May 1961							
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00	6.4	29	225				3.35
01	5.7	29	230				3.30
02	5.4	29	230				3.30
03	4.2	29	235				3.25
04	3.7	26	245				3.30
05	3.1	24	245				3.35
06	3.6	30	270				3.05
07	6.9	31	245				3.25
08	8.5	31	230				3.00
09	---	8.6	31	215	---	111 (2.85)	5.7
10	(300)	9.0	31	205	4.6	111 (3.20)	7.2
11	(330)	8.2	31	200	4.7	111 (3.45)	7.6
12	(340)	8.0	31	200	4.7	---	7.5
13	---	8.0	31	195	---	109 (3.65)	7.6
14	---	8.1	31	195	---	109 (3.60)	7.4
15	---	8.5	29	200	---	---	7.4
16		8.6	29	220	---	---	7.0
17		8.5	30	250	---	---	6.0
18		8.25	30	275	---	---	5.4
19		7.7	30	295			2.60
20		8.0	28	280			2.60
21		7.9	28	240			2.75
22		7.1	29	225			3.05
23		6.4	28	230			3.20

Time: 75.0°W.  
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 4

Tromsø, Norway (69.7° N, 19.0° E)							
April 1961							
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		(3.8)	5	(325)			3.7
01		(3.9)	4	(310)			3.3
02		(3.2)	3	---			4.3
03		(3.8)	7	(305)			4.0
04		4.0	12	(270)	---	---	2.2
05	---	4.4	15	275	---	115 2.10	(2.80)
06	---	4.8	19	255	---	110 2.30	(2.90)
07	---	5.0	20	250	---	110 2.50	2.70
08	390	5.4	22	245	4.05	110 2.75	2.75
09	370	5.6	21	235	4.15	110 2.90	2.90
10	350	5.7	23	230	4.20	110 3.00	2.90
11	360	5.9	25	220	4.25	110 3.00	2.90
12	340	6.0	24	215	4.30	110 3.00	2.90
13	345	6.0	24	215	4.25	110 3.00	2.90
14	(350)	5.9	22	230	4.25	110 2.95	2.90
15	---	5.9	27	230	---	110 2.80	2.90
16	---	5.6	25	240	---	110 2.70	2.95
17	---	5.6	24	250	---	115 2.60	3.05
18	---	5.5	23	250	---	115 2.20	3.00
19	(260)	5.2	22	(260)	---	115 1.90	2.95
20		(5.1)	14	(270)	---	---	3.5
21		(4.5)	7	(290)	---	---	3.9
22		(4.2)	4	---	---	---	3.0
23		(4.2)	1	---	---	---	3.9

Time: 15.0°E.  
Sweep: 0.7 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 5

Kiruna, Sweden (67.8° N, 20.3° E)							
April 1961							
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		(4.8)	2	325			3.4
01		(3.2)	3	315			3.2
02		(3.2)	9	310			3.0
03		3.0	13	310	---	---	1.4
04		3.5	16	295	---	---	1.4
05	---	4.3	23	260	---	---	1.8
06	(410)	4.6	26	245	3.4	110 2.2	2.5
07	370	5.0	27	235	3.8	110 2.4	2.7
08	370	5.2	26	230	4.0	110 2.6	2.7
09	340	5.7	27	225	4.1	110 2.7	2.7
10	340	5.7	29	215	4.2	110 2.8	2.7
11	345	5.8	30	220	4.2	110 2.8	(2.8)
12	325	6.0	28	215	4.3	110 2.9	2.8
13	330	5.8	28	215	4.2	110 2.8	2.8
14	330	5.9	29	225	4.2	110 2.8	2.8
15	310	5.9	29	225	3.9	110 2.6	(2.8)
16	285	5.7	29	240	3.5	110 2.4	(2.9)
17	(270)	(5.5)	28	245	3.2	110 2.3	2.9
18	---	(5.2)	24	255	---	110 2.1	2.85
19		5.0	18	260	---	---	3.0
20		5.4	12	265	---	---	3.1
21		(4.8)	4	265	---	---	3.8
22		(4.2)	3	300	---	---	4.0
23		(3.3)	3	300			

Time: 15.0°E.  
Sweep: 0.8 Mc to 15.0 Mc in 30 seconds.

Table 6

Sodankylä, Finland (67.4° N, 26.6° E)							
April 1961							
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		(4.6)	4	300			3.3
01		(4.5)	7	310			2.4
02		(4.3)	5	320			2.6
03		(4.7)	4	310	---	---	2.4
04		(3.8)	8	305	---	E	2.3
05		4.2	11	275	---	150 1.70	2.2
06		4.5	23	260	---	120 2.00	2.90
07		4.8	24	240	---	120 2.40	2.90
08		5.2	23	230	4.0	115 2.50	2.80
09		5.6	24	220	4.2	115 2.75	2.85
10		5.8	27	225	4.4	115 2.90	2.90
11		6.0	28	215	4.3	115 3.00	2.90
12		6.0	28	215	4.4	115 3.00	2.90
13		6.1	25	210	4.4	115 3.00	2.90
14		6.0	29	225	4.2	115 2.90	2.90
15		6.0	27	225	---	120 2.80	2.95
16		6.0	26	230	---	115 2.75	3.00
17		5.8	27	240	---	120 2.55	2.95
18		5.7	25	250	---	120 2.25	3.00
19		5.3	20	255	---	125 2.00	3.00
20		5.0	17	260	---	E	2.8
21		5.1	16	275	---	E	2.90
22		5.0	11	290	---	---	2.85
23		(4.9)	7	290			3.2

Time: 30.0°E.  
Sweep: 1.4 Mc to 22.0 Mc in 8 minutes, automatic operation.

Table 7

Lulea, Sweden (65.6° N, 22.1° E)								April 1961
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(3.6) 16	340					(2.9)
01		(3.6) 14	325					(2.9)
02		>3.5 12	315					---
03		(3.0) 13	300					(2.8)
04		3.4 17	280					2.95
05		4.2 21	250		125	2.0		3.1
06		4.6 20	250		125	2.3		3.1
07	(375)	5.0 19	235	3.9	120	2.6		2.9
08	360	5.3 25	230	4.1	120	2.8		3.0
09	360	5.7 26	230	4.2	120	3.0		3.0
10	335	5.8 26	225	4.3	120	3.1		3.0
11	325	6.1 26	225	4.4	120	3.2		3.0
12	330	6.2 26	225	4.3	120	3.2		3.0
13	340	6.1 27	225	4.3	115	3.1		3.0
14	310	6.2 26	225	4.1	115	3.0		3.0
15	(330)	6.2 29	230	3.9	120	2.8		3.0
16		6.0 27	240	---	125	2.6		3.0
17		6.1 23	250		130	2.4		3.0
18		5.8 28	255		140	2.0		3.1
19		5.4 23	250		150	1.8		3.1
20		5.3 17	260					3.0
21		4.8 14	280					3.0
22		(4.6) 20	285					2.9
23		(4.2) 14	300					(2.9)

Time: 15.0°E.

Sweep: 0.65 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 8

Lycksele, Sweden (64.6° N, 18.8° E)								April 1961
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		3.9 29	290				2.4	2.7
01		3.6 29	290				2.2	2.6
02		3.4 27	285				2.2	2.7
03		3.2 29	280				2.1	2.7
04		3.5 26	280		110	1.5	3.0	2.7
05	---	(4.0) 27	250	---	110	1.8	3.0	(2.9)
06	---	(4.5) 27	240	(3.7)	110	2.1	3.4	(2.9)
07	350	4.9 29	220	(3.9)	105	2.4	3.4	2.8
08	355	5.2 29	210	4.0	100	2.6	3.6	2.8
09	340	5.6 29	205	4.2	100	2.8	3.8	2.8
10	320	(5.8) 29	205	4.2	100	2.9	4.8	(2.85)
11	330	(5.8) 30	210	4.3	100	3.0	3.6	(2.8)
12	330	(6.0) 30	210	4.3	100	3.0	3.7	(2.8)
13	330	(6.0) 30	205	4.2	100	2.9	3.4	(2.85)
14	305	(6.0) 30	210	4.2	100	2.8	2.8	(2.9)
15	310	(6.1) 30	220	4.0	105	2.7	3.4	(3.0)
16	310	(6.0) 30	235	3.9	105	2.5	3.2	(2.95)
17	---	(5.9) 29	235	---	105	2.3	3.0	(3.0)
18		6.0 28	240		110	2.0	3.0	3.0
19		5.6 29	240		110	1.7	2.9	3.0
20		5.0 29	245		---	1.4	2.3	2.9
21		4.2 28	260		---	---	2.5	2.8
22		4.0 28	270				2.2	2.7
23		4.1 29	285				3.0	2.7

Time: 15.0°E.

Sweep: 0.33 Mc to 20.0 Mc in 3 minutes.

Table 9

Nurmijarvi, Finland (60.5° N, 24.6° E)								April 1961
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(3.2) 5	300					(3.00)
01		(4.0) 3	300					---
02		(3.5) 3	300					---
03		(2.6) 2	300					---
04		(3.0) 3	300					---
05		(2.8) 9	280					(3.10)
06		4.2 19	240			2.00		3.20
07		4.7 21	230			2.40		3.10
08		5.1 18	220	4.1		2.50		3.10
09		5.6 18	210	4.2		2.70		3.10
10		6.0 25	210	4.3		2.90		3.10
11		6.1 20	210	4.4		2.90		3.10
12		6.2 24	205	4.4		3.00		3.10
13		6.4 28	210	4.4		3.00		3.10
14		6.4 30	220	4.5	---	---		3.20
15		6.4 30	210	4.3	---	---		3.20
16		6.4 30	210	---		2.55		3.15
17		6.4 30	230			2.60		3.20
18		6.1 25	240			2.30		3.20
19		6.2 16	250			1.90		3.20
20		6.2 15	240					3.20
21		(5.9) 6	245					(3.20)
22		(4.8) 6	270					(3.10)
23		(3.7) 3	285					---

Time: 30.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 1 minute.

Table 10

Upsala, Sweden (59.8° N, 17.6° E)								April 1961
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		3.8 26	270		---	---	2.3	2.75
01		3.6 25	275		130	0.95	2.3	2.7
02		3.1 25	275		135	0.90	2.3	2.7
03		2.9 27	275		120	0.90	2.3	2.7
04		2.9 28	265		120	1.30	3.0	2.85
05		3.9 29	245		110	1.70	3.0	3.0
06	---	4.6 30	235	---	105	2.20	3.4	3.0
07	(360)	5.0 30	215	4.1	100	2.45	3.7	3.0
08	325	5.4 30	210	4.2	100	2.65	4.2	3.0
09	335	5.8 29	205	4.3	100	2.90	4.0	3.0
10	320	6.2 30	205	4.4	100	3.10	4.4	3.1
11	315	6.3 30	200	4.4	100	3.20	4.6	3.0
12	310	6.4 30	200	4.5	100	3.20	4.7	3.0
13	300	6.8 30	205	4.4	100	3.20	4.7	3.0
14	310	6.5 30	210	4.4	100	3.05		3.1
15	300	6.7 30	210	4.4	100	2.85	4.0	3.1
16	290	6.6 30	215	4.0	100	2.60	3.5	3.1
17	---	6.8 30	230	---	105	2.40	3.2	3.1
18		6.6 30	240		110	2.00	2.4	3.1
19		6.4 30	240		120	1.60	2.2	3.1
20		6.0 28	240		125	1.20	1.5	3.0
21		5.3 30	240		---	0.90	1.6	3.0
22		4.8 28	250		---	---	2.2	2.9
23		4.4 25	260				2.2	2.8

Time: 15.0°E.

Sweep: 0.3 Mc to 20.0 Mc in 3 minutes.

Table 11

Churchill, Canada (58.8° N, 94.2° W)								April 1961
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		3.7 27	280		---		4.8	(3.0)
01		4.0 28	300		---		4.3	---
02		3.6 26	300		---		4.0	---
03		3.4 26	310		1.8		3.4	(2.9)
04		3.4 27	330		1.8		3.0	(2.8)
05		3.2 25	320		2.0		2.8	(2.95)
06	---	4.0 21	310	---	2.5		3.6	2.95
07	520	<4.3 24	330	3.8	2.8		4.1	2.7
08	450	4.8 25	260	4.1	3.2		4.0	2.8
09	430	4.8 24	240	4.2	3.2		4.2	2.7
10	420	5.0 25	240	4.3	3.2			2.7
11	435	5.2 28	230	4.3	3.2			2.65
12	430	5.4 28	230	4.4	3.2			2.7
13	400	5.6 29	230	4.4	3.3			2.8
14	390	5.8 28	230	4.4	3.2			2.8
15	370	6.0 27	235	4.2	3.0			2.8
16	360	5.8 28	235	4.0	2.9			2.8
17	335	5.0 30	245	3.9	2.6			2.9
18	(330)	5.4 30	280	3.7	2.4			3.0
19		4.8 30	290		2.6			3.0
20		4.5 30	300		2.5		3.9	2.9
21		4.2 29	290		2.1		4.6	2.9
22		4.0 28	295		---		6.0	(2.8)
23		4.0 27	280		---		5.5	(2.8)

Time: 90.0°W.

Sweep: 1.0 Mc to 17.0 Mc in 16 seconds.

Table 12

Inverness, Scotland (57.4° N, 4.2° W)								April 1961
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		>4.0 28						2.75
01		(3.6) 27						2.70
02		(3.2) 26						2.75
03		(3.0) 26						2.70
04		(2.8) 27						2.85
05		3.4 28						3.00
06		4.1 28						3.00
07		4.8 28						2.90
08		5.3 29						2.90
09		>5.5 29						2.90
10		5.9 29						2.90
11		6.0 28						2.90
12		6.3 27						2.95
13		6.4 27						2.95
14		6.5 29						2.95
15		6.5 29						2.95
16		6.5 29						2.95
17		6.8 29						2.95
18		>6.7 29						2.95
19		(5.8) 29						3.00
20		>5.6 28						(3.00)
21		(4.9) 28						(2.85)
22		>4.2 27						<2.85
23								2.70

Time: 0.0°.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 13

De Bilt, Holland (52.1° N, 5.2° E)								April 1961
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		4.3 25	300					2.75
01		4.1 26	300					2.70
02		3.7 26	(300)					2.70
03		3.6 27	(300)					2.75
04		3.3 27	<300					2.85
05	---	3.9 28	230	---	---	1.9		3.10
06	---	5.1 27	250	---	134	2.1		3.15
07	310	5.2 27	230	3.8	120	2.5		3.10
08	340	5.8 28	220	4.3	118	2.8		3.00
09	320	6.0 29	215	4.5	116	3.1	3.2	3.00
10	315	6.4 30	215	4.7	116	3.2	3.5	3.10
11	300	6.7 22	210	4.7	115	3.4	3.6	3.05
12	300	6.6 24	210	4.8	116	3.4		3.00
13	300	6.8 29	215	4.8	116	3.3	3.3	3.05
14	300	7.0 29	220	4.7	115	3.2		3.10
15	295	7.0 30	225	4.6	118	3.0		3.10
16	275	7.1 29	230	---	120	2.8		3.10
17	265	7.1 29	245	---	125	2.3		3.10
18	---	7.1 29	255	---	---	1.9		3.10
19		7.1 28	250					3.05
20		6.3 27	260					2.95
21		5.7 28	260					2.95
22		4.9 27	290					2.80
23		4.4 27	300					2.75

Time: 0.0°.

Sweep: 1.8 Mc to 18.0 Mc in 4 minutes.

Table 14

Pruhonice, Czechoslovakia (50.0° N, 14.6° E)								April 1961
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		4.7 27	290					
01		4.4 27	280					
02		4.3 27	260					
03		4.0 27	255					
04		4.0 27	255					
05		4.6 26	235					
06		5.5 27	230					
07		5.6 27	215					
08		6.4 29	200					
09		6.8 29	200					
10		6.9 29	200					
11		7.2 27	200					
12		7.4 25	205					
13		7.4 28	210					
14		7.3 28	215					
15		7.3 28	220					
16		7.3 29	230					
17		7.3 29	240					
18		7.6 28	240					
19		7.0 28	230					
20		6.2 28	240					
21		5.5 28	250					
22		5.0 28	260					
23		4.9 28	290					

Time: 0.0°.

Sweep: 1.0 Mc to 18.0 Mc.

Table 15

Winnipeg, Canada (49.9° N, 97.4° W)								April 1961
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		3.0 27	300					2.9
01		2.8 27	325					2.8
02		2.5 27	310					2.9
03		2.5 27	320					(2.9)
04	---	2.4 26	<330	---	---			2.9
05	---	2.7 27	300	---	---			3.0
06	---	3.5 28	265	---	2.0			3.1
07	(430)	4.2 28	230	3.8	2.3			3.1
08	400	4.7 25	220	4.0	2.8			3.05
09	395	5.0 28	210	4.2	3.0			2.95
10	395	5.4 28	200	4.4	3.2			2.9
11	400	5.6 28	200	4.4	3.4			2.9
12	370	6.0 26	200	4.5	3.4			2.9
13	370	6.2 26	205	4.6	3.3			2.9
14	360	6.2 27	210	4.5	3.3			2.9
15	330	6.2 29	215	4.4	3.2			3.0
16	310	6.2 29	220	4.3	3.0			3.0
17	295	6.2 28	230	4.0	2.7			3.0
18	290	6.0 29	240	---	2.3			3.0
19	---	6.1 29	250		1.9			3.1
20		5.9 29	250		---			3.0
21		5.2 29	250					3.0
22		4.2 28	260					3.0
23		3.3 27	290					3.0

Time: 90.0°W.

Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 16

St. John's, Newfoundland (47.6° N, 52.7° W)								April 1961
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		3.5 27	300					2.7
01		3.2 28	(290)					2.7
02		3.0 25	290					2.8
03		2.9 25	<275					2.8
04		2.4 25	295					2.8
05		3.4 30	260					3.0
06	(300)	4.3 30	240	---			2.00	2.20
07	350	4.6 30	230	4.0			2.70	3.0
08	370	5.0 29	210	4.2			3.00	2.9
09	350	5.4 29	200	4.3			3.10	2.9
10	365	5.6 30	200	4.4			3.20	2.9
11	380	5.8 29	205	4.4			3.30	2.9
12	355	6.2 30	205	4.5			3.30	2.9
13	350	6.4 30	220	4.5			3.20	2.8
14	315	6.6 30	220	4.4			3.00	2.9
15	300	6.4 30	220	4.2			2.95	2.9
16	300	6.4 30	225	---			2.70	2.9
17	(295)	6.6 29	250				2.25	2.9
18		7.0 28	260				----	2.9
19		6.8 27	250					2.8
20		6.0 26	250					2.8
21		5.2 27	270					2.7
22		4.6 24	295					2.7
23		3.9 25	300					2.7

Time: 60.0°W.

Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 17

Graz, Austria (47.1° N, 15.5° E)								April 1961
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		(4.9) 23	330					
01		(4.6) 26	320					
02		(4.8) 24	320					
03		(4.4) 28	300					
04		(4.0) 27	290					
05		>3.8 27	(290)					
06		5.0 28	(250)					
07		5.6 28	250					
08	350	>5.7 27	235	(4.3)				
09	310	>6.5 24	235	4.5				
10	300	7.2 25	<235	4.6				
11	305	(7.3) 29	<240	4.8				
12	320	7.4 28	<245	4.8				
13	305	7.9 28	<255	4.8				
14	310	(7.6) 28	<265	(4.6)				
15	300	(7.6) 27	<250	(4.6)				
16	300	(7.6) 27	240	(4.4)				
17		7.6 26	250					
18		7.8 28	260					
19		(7.6) 26	250					
20		>5.6 27	260					
21		>5.6 26	270					
22		>5.5 27	290					
23		>5.0 23	310					

Time: Local.

Sweep: 2.0 Mc to 18.0 Mc in 50 seconds.

Table 18

Sottens, Switzerland (46.6° N, 6.7° E)								April 1961
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		4.6 26	300					2.8
01		4.6 29	300					2.8
02		4.5 29	300					2.8
03		4.3 29	285					2.8
04		4.1 29	275					2.8
05		3.8 28	270					2.9
06		4.2 29	260					3.1
07	---	5.0 29	240	---	120	2.30		3.2
08	300	5.6 28	230	4.0	110	2.70		3.2
09	300	5.9 27	220	4.2	100	3.00		3.1
10	300	6.7 28	200	4.6	100	3.10		3.1
11	300	6.8 30	200	4.6	100	3.30		3.1
12	300	7.0 29	200	4.7	100	3.30		3.1
13	300	7.4 30	200	4.7	100	3.30		3.0
14	300	7.4 29	220	4.7	100	3.30		3.1
15	290	7.4 29	220	4.5	100	3.20		3.1
16	280	7.4 30	230	4.3	100	3.00		3.1
17	280	7.2 28	240	4.1	110	2.70		3.2
18	---	7.3 27	250	---	120	2.30		3.2
19		7.0 28	245					3.3
20		6.7 27	240					3.2
21		6.4 28	250					3.0
22		5.7 25	250					3.0
23		4.8 25	280					2.8

Time: 15.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 19

Ottawa, Canada (45.4° N, 75.9° W)									April 1961
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00		3.6 28 300						---	
01		3.2 29 300						---	
02		3.0 29 315						---	
03		2.8 27 305						---	
04		2.2 28 320						---	
05	---	3.0 30 280				---		(3.2)	
06	---	4.0 30 250				2.0		3.2	
07	320	4.8 30 235		(4.0)		2.6		3.2	
08	335	5.2 30 220		(4.2)		2.9		3.1	
09	350	5.7 30 210		4.4		3.0		3.2	
10	350	6.0 30 200		4.5		3.2		3.1	
11	350	6.5 30 200		4.6		3.3		3.0	
12	350	6.5 30 200		4.7		3.4		3.0	
13	335	6.8 30 200		4.7		3.4		3.0	
14	330	6.9 29 210		4.6		3.3		3.0	
15	320	7.0 30 220		4.5		3.1		3.0	
16	300	7.0 30 220		(4.2)		2.9		3.0	
17	290	6.9 29 235		(4.0)		2.6		3.1	
18	(290)	7.0 29 250				2.0		3.1	
19		6.8 29 250				1.5		3.1	
20		6.2 29 250						3.0	
21		5.3 29 250						3.0	
22		4.7 29 275						2.9	
23		4.0 29 290						(2.8)	

Time: 75.0°W.

Sweep: 1.0 Mc to 20.0 Mc in 16 seconds.

Table 20

Rome, Italy (41.8° N, 12.5° E)									April 1961
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		(5.3) 27 300							(2.65)
01		5.3 29 300							2.70
02		5.2 29 300							2.70
03		5.0 28 280							2.70
04		4.4 29 260							2.80
05		4.0 28 270							2.80
06		5.0 28 250			140	1.9			3.15
07	---	5.8 28 240	---		120	2.4			3.15
08	---	6.5 29 230	---		110	2.8			3.10
09	---	6.7 28 220	---		110	3.1			3.05
10	(310)	7.7 29 210		(4.6)	110	3.3			3.00
11	(290)	8.0 27 210		(4.9)	110	3.4			3.00
12	(310)	8.2 29 210		4.9	110	3.4			2.90
13	(310)	8.4 28 210		(5.0)	110	3.4			3.00
14	(310)	8.6 28 220		4.6	110	3.4			3.00
15	---	8.6 29 240	---		110	3.3			3.00
16	---	8.3 30 240	---		110	3.0			3.05
17		8.3 30 240			120	2.6	3.1		3.05
18		8.4 30 250			130	2.0	2.8		3.10
19		(8.3) 25 240					2.6		(3.05)
20		(6.8) 19 240							(2.95)
21		(6.1) 21 250							(2.75)
22		5.7 23 280							2.70
23		(5.6) 19 300							2.60

Time: 15.0°E.

Sweep: 1.4 Mc to 15.0 Mc in 5 minutes, automatic operation.

Table 21

Formosa, China (25.0° N, 121.5° E)									April 1961
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		>8.9 27 280							(2.90)
01		>9.0 30 265							2.90
02		>9.0 29 235							3.10
03		7.0 28 215							3.30
04		5.4 29 230							3.00
05		4.7 28 <270							2.90
06		6.2 30 240			---	---			3.30
07	---	7.3 30 240			---	---			3.30
08	---	8.4 30 230			(113)	---	3.5		3.20
09	---	8.9 30 220			(111)	---	3.8		2.95
10	(310)	>10.0 29 210			<111	---	3.9		2.80
11	(340)	(11.7) 29 (210)		(5.1)	<111	---			(2.75)
12	330	13.6 30 <225		(5.2)	(112)	---	3.9		2.85
13	315	>14.6 30 (230)		(5.2)	---	---	4.4		2.90
14	310	14.9 29 (230)		(5.0)	---	---	4.0		2.95
15	295	>15.0 29 225		---	<119	---	3.9		(3.00)
16	280	>15.0 29 230		---	<121	---	3.2		(3.05)
17	260	>14.6 30 250					3.0		3.00
18		>14.0 30 240					3.0		(3.00)
19		>9.8 28 240							---
20		>9.0 28 265							(2.70)
21		>9.0 28 260							(2.65)
22		>9.0 29 295							(2.80)
23		>9.0 30 285							

Time: 120.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 22

Singapore, British Malaya (1.3° N, 103.8° E)									April 1961
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		9.6 24 220			---				3.10
01		8.9 27 220			---				3.30
02		6.9 27 225			120	---			3.30
03		6.1 28 240			---		1.5		3.20
04		5.1 29 235			---		2.3		3.35
05		4.0 24 225			---		1.6		3.40
06	---	4.8 25 255	---		130	---	2.6		3.20
07	---	8.2 28 245	---		115	2.20	2.9		3.20
08	---	10.2 30 230	---		110	3.00	3.4		3.00
09	300	11.0 29 215	---		110	3.40	3.4		2.75
10	305	11.1 27 210		4.9	105	3.60			2.40
11	335	12.0 25 200		4.9	105	3.75			2.20
12	335	11.2 26 200		4.9	105	3.80			2.25
13	315	11.4 28 200		4.9	105	3.80			2.40
14	305	11.3 30 200		4.9	105	3.65			2.35
15	300	11.6 30 205	---		110	3.40			2.35
16	230	11.8 30 220	---		110	3.05	3.0		2.40
17	250	12.2 29 240	---		115	2.45	2.7		2.50
18	---	12.4 27 300	---		---	---	2.5		2.60
19		12.7 27 300			---	---	2.3		2.65
20		12.6 24 280							2.65
21		12.7 21 240							2.90
22		11.5 22 215							3.15
23		10.7 22 215							3.05

Time: 105.0°E.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 23

Johannesburg, Union of S. Africa (26.1° S, 28.1° E)									April 1961
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		3.3 25 ---					<1.5		2.85
01		3.3 25 ---					1.4		2.90
02		3.5 25 ---					1.1		2.90
03		3.6 25 ---					<1.2		3.10
04		3.2 25 ---					1.4		3.10
05		3.0 25 ---					<1.3		3.10
06		3.2 25 250				<1.1	<1.1		3.00
07		3.6 25 230				2.2			3.40
08	230	8.0 25 225				2.8			3.35
09	250	8.8 24 220				3.1	3.2		3.25
10	260	9.8 24 210	---			3.3	3.6		3.20
11	260	9.9 24 200	---			3.5	3.7		3.05
12	260	10.1 25 200	---			3.6	3.7		2.95
13	285	10.0 26 210	---			3.6	3.8		2.95
14	270	10.3 26 220	---			3.4	3.7		2.95
15	265	10.6 26 220	---			3.2	3.6		3.00
16	250	10.3 26 230				2.9	3.1		3.05
17	---	9.8 25 230				2.2	2.2		3.20
18		8.7 25 220				(1.5)	<1.7		3.25
19		6.2 25 210					<1.7		3.25
20		4.5 25 (225)					1.4		3.10
21		4.1 25 ---					1.6		3.10
22		(3.8) 25 ---					<1.7		3.10
23		3.3 25 ---					<1.5		3.00

Time: 30.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 24

Mundaring, W. Australia (32.0° S, 116.2° E)									April 1961
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		3.7 25 <270							3.00
01		3.9 26 <265							3.00
02		4.0 26 260							3.05
03		4.0 25 260							3.10
04		3.8 25 230							3.20
05		3.6 26 260							3.15
06		3.4 26 260							3.10
07		5.7 22 225					1.90		3.40
08		7.2 24 225					2.40	2.5	3.40
09		8.0 22 215	---				2.80	3.0	3.30
10		9.2 20 200		4.5			3.00	3.4	3.30
11		9.0 20 200		4.6			3.15	3.7	3.20
12		9.3 23 200		4.7			3.30	3.6	3.20
13		9.4 25 200		4.6			3.25	3.6	3.10
14		10.0 24 215		4.5			3.25	3.4	3.10
15		10.0 24 220		4.5			3.00	3.3	3.20
16		9.8 27 225		4.0			2.70	2.9	3.25
17		9.1 27 225					2.30		3.40
18		7.5 25 <210							3.35
19		5.2 28 210							3.20
20		4.7 27 (230)							3.15
21		4.2 25 <240							3.10
22		4.0 27 (255)							3.00
23		3.8 26 <270							3.00

Time: 120.0°E.

Table 25

Capetown, Union of S. Africa (34.1° S, 18.3° E)									April 1961
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		3.0 30	---				<1.6	2.90	
01		3.0 30	---				<1.6	2.85	
02		3.1 29	---				<1.6	2.85	
03		3.2 29	---				<1.5	2.90	
04		3.4 29	---				<1.4	3.05	
05		3.3 30	---				<1.4	3.20	
06		3.1 29	---				<1.4	3.05	
07		4.2 30	240		<1.4		<1.4	3.20	
08		6.7 30	230			2.2		3.45	
09	240	8.0 30	230			2.8		3.40	
10	250	8.8 30	220	---		3.1		3.25	
11	260	9.6 30	210	---		3.3		3.10	
12	270	10.2 30	205	---		(3.4)		3.05	
13	280	10.7 30	200	---		3.4		3.00	
14	280	10.7 30	210	---		3.4		2.95	
15	270	10.8 30	225	---		3.2		3.05	
16	255	10.6 30	230			3.0		3.05	
17	250	10.3 30	240			2.5		3.20	
18		9.0 30	220			1.8		3.30	
19		6.6 30	210			<1.4	<1.5	3.30	
20		4.8 30	(220)			<1.5	<1.5	3.20	
21		4.2 30	(225)			<1.5	<1.5	3.25	
22		3.4 30	---			<1.6	<1.6	3.20	
23		3.0 30	---			<1.5	<1.5	3.10	

Time: 30.0°E.

Sweep: 1.0 Mc to 17.0 Mc in 7 seconds.

Table 26

Falkland Is. (51.7° S, 57.8° W)									April 1961
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00			3.6 16	310					----
01			3.8 21	330					2.60
02			3.7 22	310					(2.60)
03			3.7 23	300					2.70
04			3.8 24	290					2.80
05			3.7 28	245					2.90
06			3.8 26	220					(3.35)
07			5.4 13	210		155	1.80		----
08	250	7.3 19	210			120	----		(3.75)
09	225	8.2 20	220			110	----	2.8	3.50
10	240	9.4 29	220			110	----	(3.3)	3.50
11	240	10.4 24	215			105	----	(3.6)	3.50
12	240	10.4 26	215			105	----	3.2	3.50
13	230	8.9 29	220			105	2.95		3.70
14	230	7.9 30	220			105	2.80		3.65
15	230	7.6 27	225			110	----	2.4	3.50
16		7.2 28	225			125	----	(2.3)	3.60
17		6.7 11	215			----	E	2.3	----
18		6.6 14	220					(2.3)	(3.35)
19		4.8 20	230					(2.2)	(3.20)
20		3.8 18	240					----	----
21		3.6 15	250					----	----
22		3.6 21	290					----	----
23		3.6 19	310					----	----

Time: 60.0°W.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 27

Slough, England (51.5° N, 0.6° W)									March 1961
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		3.6 28	300				<1.3	2.70	
01		3.6 29	300				<1.0	2.70	
02		3.5 27	300				<0.9	2.70	
03		3.3 29	280				<0.9	2.70	
04		3.0 27	275				(1.0)	2.80	
05		2.4 31	260				<1.1	2.90	
06		3.2 29	260			---	----	3.00	
07		4.8 30	230			---	110 1.90	3.25	
08	---	5.9 29	220			---	110 2.30	3.25	
09	330	6.4 30	210	4.0	105	2.75		3.20	
10	295	7.0 28	210	4.2	105	2.95		3.25	
11	285	7.4 28	205	4.4	105	3.05		3.20	
12	290	7.7 30	205	4.4	105	3.15		3.20	
13	290	7.3 31	210	4.3	105	3.15		3.20	
14	290	7.4 31	220	---	105	3.05		3.20	
15	275	7.5 31	220	---	105	2.85		3.20	
16		7.7 31	230			110 2.60	2.6	3.20	
17		7.5 30	240			110 2.20	2.3	3.20	
18		(7.2) 29	235	---	1.70		1.9	3.20	
19		7.0 31	225				<1.6	3.15	
20		5.9 31	225				<1.6	3.05	
21		4.8 30	<235				<1.6	2.95	
22		4.2 31	230				<1.6	2.85	
23		3.7 29	<280				<1.6	2.80	

Time: 0.0°.

Sweep: 0.65 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 28

Dourbes, Belgium (50.1° N, 4.6° E)									March 1961
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		3.6 29	295						2.80
01		3.6 29	295						2.75
02		3.5 29	285				1.2		2.80
03		3.5 29	280						2.85
04		3.1 29	270						2.90
05		2.5 29	255						2.95
06		3.7 28	250			(129)	1.35		3.30
07	(300)	5.3 27	230	----		119	2.00		3.40
08	(265)	5.9 27	220	3.60	113	2.40			3.35
09	285	6.7 26	215	4.00	111	2.70			3.30
10	280	7.4 25	210	4.10	111	2.95			3.25
11	270	7.6 28	210	4.20	111	3.10			3.30
12	270	7.8 29	215	4.25	109	3.10			3.25
13	270	7.8 27	220	4.30	111	3.10			3.20
14	275	7.5 25	225	----	111	2.95			3.25
15	(280)	7.7 25	230	----	(113)	2.70			3.30
16	---	7.8 26	235		<119	2.35	2.4		3.30
17		7.4 27	240		(125)	1.90	1.9		3.25
18		7.1 26	230		---	<1.35	<1.5		3.30
19		6.4 26	230				<1.3		3.25
20		5.5 27	235				1.3		3.10
21		4.4 29	240				<1.2		3.00
22		3.9 29	265				<1.5		2.90
23		3.8 29	290				<1.1		2.85

Time: 0.0°.

Sweep: 1.0 Mc to 20.0 Mc in 3 minutes.

Table 29

Falkland Is. (51.7° S, 57.8° W)									March 1961
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		4.9 11	310					----	
01		5.0 18	305					----	
02		4.9 18	310					(2.60)	
03		4.9 16	295					(2.60)	
04		4.6 15	280					(2.80)	
05		4.4 15	270			---	E	(2.70)	
06	---	5.0 16	240			160 1.70		----	
07	425	6.7 16	225			120 2.20	(2.5)	----	
08	475	7.7 20	220	---		115	3.2	3.45	
09	265	8.9 21	225	---		110	----	(4.2)	3.30
10	255	9.5 23	220	---		110	(4.5)	3.30	
11	260	10.3 28	215	---		105 (3.10)	(4.7)	3.20	
12	260	10.8 26	210	---		105	(4.7)	3.30	
13	250	9.9 26	220	---		105	(4.3)	3.50	
14	250	8.8 26	220			105 3.20	(3.6)	3.60	
15	215	8.1 27	230			110 2.95	3.5	3.40	
16	240	7.8 26	240			110 2.65	(3.2)	3.55	
17	255	7.7 23	240			115 E	(3.2)	----	
18	---	7.7 27	235	---		E	(2.7)	3.30	
19		7.3 13	240	---		E	(2.6)	(3.30)	
20		6.5 12	240				(2.7)	----	
21		(6.1) 7	240				(3.0)	----	
22		5.2 10	290				2.4	----	
23		(4.9) 9	305					----	

Time: 60.0°W.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 30

Graz, Austria (47.1° N, 15.5° E)									July 1960
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		>6.6 21	310						(2.6)
01		>6.6 22	310						(2.6)
02		(6.4) 20	305						(2.7)
03		(5.7) 19	310						(2.6)
04		(5.4) 16	320						(2.7)
05	(385)	6.0 19	290						(2.7)
06	(385)	6.6 20	235	4.2					2.8
*07	340	(6.8) 21	<260	4.4					2.9
08	320	7.2 20	<255	(4.8)					2.8
09	330	7.5 19	<260	5.2					2.8
10	350	7.8 21	<250	5.4					2.8
11	340	8.2 20	<260	5.3					2.8
12	330	8.2 19	<265	5.4					2.8
13	355	7.9 20	<260	5.3					2.8
14	350	7.8 19	<240	5.3					2.8
15	330	8.0 21	<260	5.1					2.9
16	330	7.8 20	<260	(5.0)					2.9
17	300	(7.4) 21	(235)	(4.6)					(2.8)
18		(7.5) 22	(260)						2.9
19		(8.2) 21	270						2.9
20		(7.6) 22	260						3.0
21		>6.6 22	270						(2.8)
22		>6.6 25	(290)						(2.9)
23		>6.6 20	290						----



Table 31

Godhavn, Greenland (69.3° N, 53.5° W)								April 1960
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.5)	15					(2.70)
01		(3.9)	14					(2.75)
02		(3.9)	11					(2.75)
03		(3.65)	8					
04		(3.8)	4					
05		(3.7)	7					
06		(4.0)	5					
07		(5.25)	6					
08		(5.75)	8					
09		(5.9)	5					
10		(6.1)	10					
11		(6.7)	9					
12		(8.5)	5					
13		(6.6)	10					
14		(5.8)	11					
15		(6.15)	14					
16		(5.9)	15					
17		(6.2)	16					
18		(5.9)	23					
19		(6.15)	20					
20		(5.8)	17					
21		(5.0)	15					
22		(4.5)	16					
23		(5.5)	14					

Time: 45.0°W.

Sweep: 1.6 Mc to 20.0 Mc in 18 seconds.

Table 33

Lindau/Harz, Germany (51.6° N, 10.1° E)								April 1960
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.39	28	307				2.46
01		5.16	27	308				2.48
02		4.98	26	310				2.51
03		4.86	24	318				2.52
04		4.40	24	305				2.53
05	---	3.98	26	296	---	---	E	2.70
06	G	4.73	29	270	---	---	2.00	2.86
07	G	5.10	29	252	3.60	110	2.56	2.86
08	(612)	5.89	30	236	4.12	106	2.92	2.80
09	480	6.65	29	234	4.52	104	3.21	2.76
10	490	7.30	29	223	4.70	102	3.39	2.81
11	371	8.50	29	224	4.92	102	3.50	2.77
12	390	8.75	29	233	5.10	103	3.53	4.0
13	358	8.95	29	220	4.98	103	3.57	3.8
14	(370)	9.10	30	228	4.95	103	3.53	3.8
15	(395)	8.78	30	229	4.72	105	3.41	3.6
16	---	8.54	29	236	---	105	3.20	3.3
17	---	8.90	28	240	---	107	2.87	3.1
18	---	9.00	29	254	---	2.38	2.8	2.88
19		8.68	28	250	---	1.80	2.7	2.90
20		7.69	26	245	---	E		2.85
21		6.80	27	248				2.73
22		6.02	28	258				2.66
23		5.82	28	293				2.53

Time: 15.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 35

Grand Bahama I. (26.6° N, 78.2° W)								April 1960
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.5	28	280			2.1	2.75
01		7.1	28	265			2.0	2.80
02		6.7	28	270				2.70
03		6.15	26	265				2.70
04		6.0	27	280				2.70
05		5.75	30	275			1.3	2.70
06	---	6.7	27	260	---	120	1.88	3.00
07	---	7.9	28	240	---	109	2.55	2.9
08	(500)	9.3	27	225	4.1	108	3.12	3.3
09	(395)	9.6	27	220	4.6	105	3.50	3.7
10	315	10.15	28	(215)	4.7	105	3.70	4.0
11	340	11.0	29	(220)	5.0	105	3.90	4.2
12	330	11.6	29	220	4.8	108	4.00	4.1
13	310	11.6	29	220	5.1	107	3.98	4.0
14	330	11.7	29	225	4.5	107	3.80	4.0
15	320	11.4	28	230	---	107	3.65	3.9
16	(370)	11.1	27	235	---	106	3.35	3.0
17	(290)	10.7	28	240	---	110	2.90	3.2
18		10.5	29	250		116	2.20	3.0
19		9.5	29	235				2.7
20		8.1	30	<250				2.4
21		7.8	29	280				2.4
22		7.8	29	<300				2.2
23		7.6	29	<290				2.3

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 32

Narsarsuaq, Greenland (61.2° N, 45.4° W)								April 1960
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.3)	15				3.2	(2.65)
01		(3.9)	13				3.1	(2.60)
02		(4.0)	11				3.5	(2.50)
03		(3.6)	11				3.5	(2.55)
04		(4.6)	5				4.2	---
05		4.6	11				4.4	(2.90)
06		5.05	16			109	(2.35)	3.1
07		5.3	19			113	2.80	2.95
08		5.65	22		4.2	111	3.00	2.75
09		5.6	24		4.3	109	3.25	2.75
10		5.75	24		4.5	109	3.32	2.60
11		6.15	24		4.6	109	3.40	2.58
12		6.25	24		4.7	109	3.42	2.65
13		6.65	22		4.7	105	3.40	2.60
14		6.9	21		4.6	105	3.30	2.70
15		6.5	23		4.5	105	3.10	2.70
16		6.6	23		---	107	2.98	2.75
17		6.35	20		---	107	2.75	2.80
18		(6.0)	23			112	2.75	3.5
19		(5.6)	24			125	(2.45)	2.3
20		(5.6)	20			---	---	3.4
21		(5.2)	14			---	---	5.2
22		(4.7)	15			---	---	5.0
23		(4.9)	12			---	---	4.5

Time: 45.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 34

Pruhonice, Czechoslovakia (50.0° N, 14.6° E)								April 1960
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.3	25	300				
01		5.2	24	300				
02		4.9	25	290				
03		4.4	26	290				
04		4.4	26	280			120	2.0
05		5.1	26	250			110	2.1
06	---	5.5	23	240	---		100	2.7
07	295	6.6	21	225	4.6		100	3.1
08	320	7.2	26	220	4.9		100	3.3
09	305	8.0	25	215	4.8		100	3.5
10	305	8.9	25	205	5.0		100	3.5
11	350	9.3	24	215	5.0		100	3.6
12	300	9.6	24	220	5.1		100	3.6
13	310	9.3	25	220	5.0		100	3.6
14	300	8.8	27	225	5.0		100	3.4
15	345	8.8	27	230	4.6		100	3.1
16	---	9.1	24	240	---		100	2.8
17		9.0	25	250			105	2.2
18		9.0	25	245			---	2.0
19		8.0	26	240			---	---
20		6.9	26	<245			---	---
21		6.3	25	260			---	---
22		5.9	25	290			---	---
23		5.8	25	300			---	---

Time: 0.0°.

Sweep: 1.0 Mc to 18.0 Mc.

Table 36

Baguio, P. I. (16.4° N, 120.6° E)								April 1960
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>10.75	18	260				---
01		>10.0	20	240				(3.08)
02		8.9	24	240				(3.05)
03		(7.4)	23	260				(2.85)
04		(7.0)	21	275				(2.82)
05		(5.8)	23	260				(2.95)
06		7.1	27	280			2.0	
07		9.45	30	260			2.4	3.00
08		(10.75)	30	255			121 (2.85)	3.3
09		>11.0	29 (250)				121	3.8
10		>11.2	27 (265)				---	4.3
11		>11.3	26 <240				---	
12	---	>11.35	28 <250				---	
13	---	(11.8)	29 <270				---	
14	---	>12.0	28 <255				---	
15	---	>12.0	27 <260				123 (3.70)	
16	---	>11.0	25 (260)				(127) (3.30)	3.6
17		>10.4	27	280			<128	3.2
18		>10.0	24 <300				---	3.0
19		>10.0	22	350			---	---
20		>10.0	16	355			---	---
21		>10.0	11	320			---	---
22		>10.0	15	290			---	---
23		>10.5	15	270			---	---

Time: 120.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 37

Sao Paulo, Brazil (23.5° S, 46.5° W) April 1960								
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(12.5)	17	250				(3.30)
01		(12.6)	18	235				(3.35)
02		(10.6)	25	225				(3.40)
03		8.5	24	220				3.30
04		6.6	25	265				2.95
05		5.2	26	<295				2.90
06		5.3	24	300		---		2.80
07		9.2	27	250		---		3.15
08		(10.9)	24	245		---		(3.10)
09		(11.8)	12	245		---		(3.20)
10		>12.0	7	(250)		---		(3.05)
11		(12.2)	10	<255		---		(3.05)
12		>10.6	2	---		---		---
13		(13.6)	4	---		---		---
14		(13.5)	4	---		---		---
15		(13.8)	8	(250)		---		(3.10)
16		(14.0)	13	<255		---		(3.05)
17		>13.6	14	255		---		(3.20)
18		(14.0)	19	260		---	2.9	(3.10)
19		(13.6)	8	260		---	2.4	(2.90)
20		(13.0)	10	260		---		(3.10)
21		(13.6)	13	250		---		(3.15)
22		(13.0)	14	235		---		(3.30)
23		(13.6)	11	240		---		(3.25)

Time: 45.0°W.

Sweep: 1.75 Mc to 20.0 Mc in 2 minutes 30 seconds.

Table 38

Concepcion, Chile (36.6° S, 73.0° W) April 1960								
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.2	27	320			2.4	2.62
01		7.0	27	300			2.1	2.70
02		7.1	28	280			2.4	2.85
03		6.6	28	240			2.0	3.05
04		5.4	25	230			2.4	2.65
05		4.75	26	285		---	1.9	2.65
06		5.1	27	280		---	1.10	2.80
07		8.85	28	230		(121)	2.30	3.30
08	---	11.5	27	230	---	111	2.85	3.35
09	---	12.4	28	230	---	109	3.20	3.25
10	---	13.05	30	230	---	109	3.40	3.15
11	(255)	14.2	30	220	---	109	(3.50)	3.15
12	---	14.8	30	220	---	110	(3.65)	3.10
13	(290)	14.9	30	<230	---	111	(3.50)	3.05
14	(270)	15.0	30	230	---	111	(3.40)	3.10
15	---	14.2	29	240	---	111	3.20	3.10
16	---	13.2	30	240	---	114	2.80	3.20
17	---	12.15	30	230	---	<139	(2.00)	3.10
18	---	10.65	30	230	---			3.6
19	---	9.85	30	250	---			2.90
20	---	9.0	30	240	---			2.7
21	---	8.1	29	260	---			2.5
22	---	7.8	29	290	---			2.0
23	---	7.45	28	300	---			2.1

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 39

Byrd Station (80.0° S, 120.0° W) April 1960								
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.3)	7	330		(137)	(2.70)	2.9
01		(4.95)	10	(350)	---	---	2.9	(2.60)
02		(4.85)	10	(345)	---	---	2.9	(2.60)
03		(4.8)	13	(335)	---	---	3.2	(2.70)
04		(4.5)	11	290	---	---	3.3	(2.78)
05		(4.2)	14	<320	---	---		(2.82)
06		(4.0)	16	(290)	---	---		(2.82)
07		(4.4)	19	(270)	---	---		(3.00)
08		(5.3)	21	(260)	---	---		(2.95)
09	---	(5.75)	24	260	---	---		(3.10)
10		6.7	25	250	---	---		3.12
11		7.2	23	245	---	---		3.10
12		(8.0)	19	(255)	---	---		(3.10)
13		(7.45)	14	255	---	---		(3.18)
14		(7.6)	13	(265)	---	---		(3.20)
15		(7.4)	7	<285	---	---		(3.10)
16		(6.0)	11	<315	---	---	3.2	(2.98)
17		(5.8)	6	270	---	---	2.6	(2.90)
18		(6.7)	7	320	---	---	2.6	(2.80)
19		(5.9)	5	320	---	---	3.3	---
20		(6.1)	5	315	---	---	3.6	---
21		(6.15)	8	300	---	---	3.8	(2.68)
22		(5.9)	6	315	---	---	3.9	---
23		(4.75)	8	340	---	---	2.0	---

Time: 120.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 40

Juliusruh/Rügen, Germany (54.6° N, 13.4° E) March 1960								
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.0	22	310				2.50
01		4.7	23	300				2.50
02		4.4	25	300				2.50
03		4.3	27	(305)		E		2.50
04		3.8	23	300		---		2.50
05		3.5	26	295		---		2.60
06		4.0	26	280		---		2.75
07		5.8	29	260		2.00		3.00
08		7.0	30	245		2.55		2.95
09		8.2	30	240		2.95		2.90
10		8.4	28	230		3.10		2.95
11		9.4	28	230		3.25		2.90
12		9.6	28	225		3.30		2.95
13		10.2	28	235		3.30		2.90
14		10.0	27	240		3.25		2.90
15		9.9	28	245		3.10		2.90
16		9.7	28	250		2.80		2.95
17		9.4	28	250		2.45		2.95
18		8.8	28	245		1.80		2.95
19		8.4	28	250				2.90
20		7.4	30	245				2.85
21		6.2	30	250				2.75
22		5.6	25	280				2.60
23		5.2	25	295				2.60

Time: 15.0°E.

Sweep: 0.5 Mc to 20.0 Mc in 20 seconds.

Table 41

Macau (22.2° N, 113.6° E) March 1960								
Time	h'F2	foF2-Count	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	400	(9.0)	7					(2.75)
01	400	(9.0)	8					(2.70)
02	400	9.0	16					2.70
03	360	9.0	13					2.70
04	350	6.6	15					2.45
05	400	4.8	16					2.40
06	465	(3.8)	5					(2.35)
07	450	7.0	21					2.40
08	430	9.0	21					2.45
09	435	9.8	21	400	---			2.40
10	(510)	11.0	22	400	6.0			2.30
11	---	11.4	22	470	---			2.20
12	---	13.0	21	450	---			2.20
13	(660)	13.2	26	440	8.5			2.10
14	(700)	13.3	17	445	8.0			2.05
15	---	13.2	17	400	8.0			2.20
16	---	13.0	12	430	---	---		2.20
17	440	(9.0)	6	440	---			(2.40)
18	445	(9.0)	3					---
19	---	---	0					(2.8)
20	---	---	0					---
21	---	(9.0)	1					---
22	(360)	---	0					---
23	400	(8.3)	1					---

Time: 120.0°E.

Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 42

Sao Paulo, Brazil (23.5° S, 46.5° W) March 1960								
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>14.0	12	240				---
01		>14.0	14	235				(3.20)
02		13.5	13	225				(3.20)
03		>12.1	16	220				(3.25)
04		7.4	19	230				3.00
05		6.2	17	255				2.90
06		6.5	18	270				2.95
07		9.1	18	240				3.10
08		10.4	15	250				(3.15)
09		10.6	14	240		---		(2.90)
10		11.7	17	(210)				(2.80)
11		12.5	16	---				(2.70)
12		13.8	13	---				(2.70)
13		(14.0)	14	---				(2.80)
14	---	(14.0)	13	---				(2.80)
15	---	(14.2)	11	---				(2.85)
16		>14.0	13	220				---
17		>14.0	15	240			3.2	---
18		>14.0	15	250				(2.95)
19		(14.0)	12	270				---
20		>14.0	15	(300)				(2.90)
21		(14.3)	11	265				<3.05
22		(14.2)	10	265				---
23		>14.0	13	240				---

Time: 45.0°W.

Sweep: 1.75 Mc to 20.0 Mc in 2 minutes 30 seconds.

Table 44

Läcksele, Sweden (64.6° N, 18.8° E)						February 1960		
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		(4.8)	27	330		---	---	3.0 (2.5)
01		(4.7)	27	320		---	(0.6)	2.5 (2.4)
02		(4.4)	28	310				2.3 (2.4)
03		4.4	27	310				2.5
04		(4.2)	28	29%				2.6 (2.5)
05		(4.2)	29	280				2.3
06		3.6	27	270				2.4 2.5
07		4.2	28	250		120	1.20	2.6 2.65
08		5.8	28	250		120	1.65	3.5 2.8
09	---	7.2	29	240	---	125	2.10	3.8 3.0
10	(245)	8.4	29	240	3.3	125	2.30	4.5 3.0
11	(245)	9.5	29	235	3.8	110	2.45	4.8 3.0
12	(255)	10.4	28	235	3.9	110	2.50	5.0 3.0
13	---	11.0	28	235	---	120	2.40	5.0 3.0
14	---	10.8	28	230	---	120	2.25	5.0 3.0
15	---	10.2	28	230	---	130	2.10	3.8 3.0
16		9.1	29	230		135	1.80	3.4 3.0
17		8.6	29	230		---	1.35	2.4 3.0
18		5.8	28	230		---	---	2.3 2.8
19		(5.0)	28	260		---	---	2.2 (2.7)
20		4.2	27	270		---	---	2.4 2.6
21		4.9	24	320		---	---	2.4 2.5
22		(4.8)	24	300		---	---	2.9 2.55
23		(5.0)	27	330		---	---	2.3 (2.5)

Time: 15.0°E.  
Sweep: 0.33 Mc to 20.0 Mc in 3 minutes.  
Occasionally, 1.4 Mc to 16.0 Mc in 6 minutes, automatic operation.

Churchill, Canada (58.8° N, 94.2° W)							February 1960	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.5 27	275				3.7	----
01		4.6 24	295				4.8	----
02		4.4 28	310				3.3	----
03		4.4 22	300				3.0	----
04		4.3 23	330				3.1	----
05		4.4 22	310				3.4	----
06		4.3 21	335				3.2	----
07		4.7 23	330				>3.4	----
08		5.5 25	300		120	2.65	>3.2	3.00
09		6.8 26	280		110	2.50	3.3	3.10
10		7.5 27	280	---	110	2.90		3.05
11	---	8.1 29	250	---	110	3.00		3.00
12	---	8.9 29	250	---	115	3.00		2.90
13	---	10.0 27	240	---	110	3.00		2.95
14	---	10.5 27	245	---	115	2.90		3.00
15	---	10.0 25	250	---	120	2.70		3.00
16		10.0 28	260		120	2.40		2.90
17		9.0 28	250		135	1.90		3.10
18		7.2 28	270		---	---	3.1	(3.10)
19		6.1 27	290				3.5	(3.00)
20		5.2 28	280				3.5	----
21		5.2 27	300				3.1	----
22		5.0 24	285				3.2	----
23		4.6 26	290				3.8	----

Time: 90.0°W.  
Sweep: 1.0 Mc to 17.0 Mc in 16 seconds.

Table 46

Inverness, Scotland (57.4° N, 4.2° W)							February 1960	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.6	28	300			<1.0	2.50
01		3.4	28	310			<1.0	2.50
02		3.1	27	310			<1.0	2.45
03		3.0	27	310			<1.0	2.50
04		3.4	29	300			<1.0	2.50
05		3.3	29	290			<1.1	2.55
06		3.1	29	285			(1.4)	2.60
07		3.7	29	270			<1.6	2.70
08		5.8	29	250		120	1.80	2.95
09		7.9	29	230		120	2.25	3.10
10		9.5	29	230		115	2.60	3.10
11		10.4	29	230		110	2.80	3.05
12		10.4	29	240		110	2.95	3.10
13		11.3	29	230		110	2.90	3.05
14		11.2	28	235		115	2.85	3.00
15		10.4	27	230		120	2.60	3.00
16		10.5	28	235		120	2.30	3.05
17		>6.3	29	230		130	1.85	(3.00)
18		>7.7	28	220			<1.6	(3.00)
19		>6.3	28	220			<1.6	2.85
20		>5.9	28	230			<1.6	2.80
21		5.5	25	230			<1.6	2.65
22		4.6	27	265			<1.6	2.65
23		(3.9)	28	300			<1.6	2.55

Time: 0.0<sup>c</sup>  
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Slough, England (51.5° N, 0.6° W)							February 1960	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.0	29	255			<1.3	2.60
01		4.7	27	295			<1.0	2.60
02		4.5	28	295			<0.8	2.65
03		4.4	26	<300			<0.9	2.60
04		3.9	27	275			>0.9	2.65
05		3.7	27	250			<1.6	2.70
06		3.4	28	230			<1.6	2.80
07		4.8	29	245		---	<1.6	3.00
08		7.9	27	230		115	2.20	3.25
09		>9.6	28	225		110	2.60	3.15
10		11.1	29	220		105	2.90	3.15
11		11.8	29	220		105	3.10	3.10
12		11.7	29	220		105	3.15	3.10
13		11.8	28	225		105	3.15	3.10
14		11.8	29	225		110	3.05	3.05
15		11.6	28	230		110	2.80	3.05
16		10.8	28	230		115	2.45	3.10
17		10.4	28	225		---	1.80	3.10
18		9.4	28	215			<1.6	3.05
19		8.0	27	<220			<1.6	3.05
20		6.5	29	<230			<1.6	2.85
21		6.0	29	<240			<1.6	2.80
22		5.2	29	<250			<1.6	2.75
23		5.0	29	<250			<1.6	2.65

Time: 0.0°.  
Sweep: 0.65 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 48

Formosa, China (25.0° N, 121.5 E)							February 1960	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	>11.2	26	250					2 90
01	10.3	27	240					2.95
02	9.4	27	240					3.00
03	7.8	27	240					3.00
04	>5.1	24	240					3.00
05	4.1	29	270					2.75
06	4 5	27	290					2.75
07	8.6	26	240					3.10
08	11.2	28	240					3.20
09	13.2	27	240			---		3.15
10	14.3	28	240					3.10
11	15.4	28	230					2.95
12	15.8	25	230					2 85
13	16.3	29	220					2 80
14	16.8	29	230					2 85
15	>17.0	29	230					2.90
16	>17.0	29	240			---		2 85
17	>16 7	27	250			---		2 85
18	>16.5	28	240					2.90
19	15.8	29	250					2 90
20	16.3	27	250					2.90
21	>16.0	25	240					2.95
22	14 4	23	240					3.00
23	12 3	23	240					2.99

Time: 1200 E.  
Sweep: 11 Mc to 19.5 Mc in 15 minutes, manual operation.

Falkland Is. (51.7° S, 57.8° W)							February 1960	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.4	25	<310			2.4	2.55
01		8.2	23	<220			2.8	2.50
02		8.2	26	<310			2.4	2.45
03		7.6	22	300	---	E	2.5	2.40
04		7.8	22	315	---	E	2.6	2.45
05		8.3	20	280	120	E		(2.35)
06		8.6	22	250	120	----		(2.50)
07		9.4	24	245	110	----	3.8	2.60
08	273	10.0	25	240	105	----	4.4	2.60
09	315	10.4	24	240	105	----	5.1	2.80
10	300	11.2	25	250	---	105	----	5.2
11	345	11.6	26	240	---	105	3.60	5.3
12	320	11.3	23	230	---	105	3.75	5.6
13	315	11.3	27	230	---	105	3.60	5.5
14	310	11.0	26	230	---	105	3.60	4.8
15	300	10.4	25	240		105	3.40	4.5
16	300	9.6	27	245		105	3.30	4.6
17	265	9.5	25	250		110	2.80	4.1
18	250	9.0	24	255		115	----	3.6
19		8.8	26	260	---	E		3.3
20		8.5	21	265	---	----		4.0
21		8.2	20	270				6.1
22		8.3	21	<300				2.6
23		8.5	19	<310				3.0

Time: 60.0°W.  
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.



Table 49

Tromsø, Norway (69.7° N, 19.0° E)							
January 1960							
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEa (M3000)F2
00	(3.9)	2	---				4.2
01	(5.6)	2	---				4.2
02	(5.3)	5	---				4.2
03	(5.3)	3	340	---			4.1
04	(5.3)	13	300	---			3.2
05	(5.0)	14	295	---			3.2
06	(4.3)	13	275	---			2.7
07	(4.0)	19	265	---			(2.55)
08	4.0	20	275	---			2.65
09	5.2	26	260	---		1.4	2.70
10	7.0	28	250	---	1.40	1.6	2.90
11	8.9	28	245	---	1.70		2.95
12	9.2	27	245	---		1.7	3.00
13	9.5	27	245	---	1.70		2.95
14	8.8	24	240	---			3.05
15	7.0	19	240	---		1.8	3.00
16	5.2	18	250	---		2.5	3.00
17	3.8	18	250	---		2.8	(2.90)
18	3.0	16	(255)	---		3.0	(2.70)
19	(4.2)	9	(300)	---		3.8	---
20	(4.2)	6	(300)	---		4.0	---
21	(4.5)	4	(290)	---		3.2	---
22	(4.9)	3	---	---		4.1	---
23	(5.7)	2	---	---			---

Time: 15.0°E.

Sweep: 0.7 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 51

Upsala, Sweden (59.8° N, 17.6° E)							
January 1960							
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEa (M3000)F2
00	2.6	20	330		105 (0.95)	2.6	2.5
01	(2.4)	24	310		105 0.85	2.3	(2.6)
02	(2.2)	29	305		105 0.90	2.4	(2.6)
03	2.3	26	295		105 (0.90)	2.5	2.6
04	(2.5)	28	290		110 0.90	2.3	2.65
05	2.6	26	275		110 0.85	2.3	2.7
06	2.6	24	265		110 0.90	2.2	2.7
07	2.8	26	260		110 1.10	2.6	2.7
08	4.9	30	245		115 1.40	2.6	2.9
09	7.4	31	230		105 1.85	3.6	3.1
10	9.7	31	230		(110) 2.15	2.8	3.1
11	11.5	31	225		(110) 2.30	2.8	3.1
12	12.0	31	230		<115 2.40	2.8	3.2
13	12.8	31	225		<120 2.30	2.7	3.2
14	11.9	31	225		(105) 2.20	2.7	3.2
15	10.9	31	215		105 1.80	2.7	3.2
16	9.4	30	215		105 1.40	2.7	3.2
17	7.4	29	210		110 1.20	2.7	3.1
18	5.6	29	220		105 1.00	2.3	3.0
19	4.3	29	235		110 (1.10)	2.2	3.0
20	3.4	28	260		105 1.10	2.2	2.8
21	3.0	27	260		110 0.90	2.4	2.8
22	3.1	24	285		110 1.00	2.4	2.7
23	2.7	20	300		110 (0.85)	2.2	2.6

Time: 15.0°E.

Sweep: 0.33 Mc to 20.0 Mc in 3 minutes.

Table 53

Rome, Italy (41.8° N, 12.5° E)							
January 1960							
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEa (M3000)F2
00	(4.6)	29	300				(2.65)
01	(4.4)	30	300				(2.60)
02	(4.3)	29	310				(2.65)
03	(4.2)	28	290				(2.70)
04	(4.2)	25	290				(2.75)
05	4.2	25	260				2.95
06	(3.5)	20	270				(2.90)
07	4.2	18	250				2.80
08	(8.5)	17	230		150	2.2	(3.30)
09	(12.0)	18	230		130	2.7	(3.30)
10	(12.2)	19	240		120	3.0	(3.20)
11	12.8	24	230		120 3.3		3.20
12	(12.0)	27	230		120 3.4		(3.10)
13	(11.8)	28	230		120 3.3		(3.10)
14	(12.4)	18	240		120 3.2		(3.05)
15	(11.8)	24	240		120 2.9		(3.05)
16	(11.5)	20	230		120 2.5		(3.15)
17	(8.8)	11	230		140 2.0	2.7	(3.25)
18	(8.2)	15	230			2.6	(3.20)
19	(6.7)	18	230			3.1	(3.20)
20	(5.4)	24	240			2.9	(3.10)
21	(4.6)	24	270			3.1	(2.80)
22	4.7	24	270			2.8	2.80
23	(4.7)	28	290				(2.85)

Time: 15.0°E.

Sweep: 1.4 Mc to 15.0 Mc in 5 minutes, automatic operation.

Table 50

Lycksele, Sweden (64.6° N, 18.8° E)							
January 1960							
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00	3 6	26	330		---	---	3.6
01	(3 6)	29	330		---	---	3.3
02	(4.2)	27	315		---	---	3.1
03	(4.0)	27	305		---	---	3.0
04	4.0	30	295		---	---	3.0
05	3.9	29	280		---	---	3.0
06	3.3	29	260		---	---	2.7
07	3.5	30	260		---	---	2.5
08	4.3	31	250		---	1.00	2.6
09	6.2	31	245		110	1.50	3.6
10	8.0	31	240		105	1.85	4.2
11	9.8	31	230		---	1.90	5.0
12	11.0	31	235		150	2.00	5.0
13	11.0	31	230		140	2.00	4.7
14	10.0	31	230		---	1.70	4.6
15	9.7	30	225		---	1.50	4.0
16	7.0	31	220		---	1.10	3.0
17	5.0	30	230		---	---	3.0
18	4.0	29	240		---	---	2.5
19	(3.5)	29	275		---	---	2.4
20	3.1	30	280		---	---	2.8
21	(3.4)	27	290		---	---	2.9
22	(3.0)	30	300		---	---	3.2
23	(3.4)	27	340		---	---	3.1

Time: 15.0°E.

Sweep: 0.33 Mc to 20.0 Mc in 3 minutes.

Table 52

De Bilt, Holland (52.1° N, 5.2° E)							
January 1960							
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00	3 2	29	<320				2.80
01	3.2	30	<330				2.75
02	3.1	31	<340				2.75
03	3.0	30	<320				2.85
04	>3.0	29	<300				2.90
05	3.0	31	<290				2.90
06	2.8	30	<300				2.90
07	3.7	31	(250)				3.05
08	---	7.1	31	215	---	---	2.0
09	---	9.7	31	220	---	145	2.6
10	---	11.6	31	220	---	125	2.8
11	(225)	12.4	31	220	---	120	3.0
12	---	>11.5	31	220	---	120	3.0
13	---	>11.6	31	220	---	125	3.0
14	---	>11.5	30	220	---	125	2.8
15	---	11.1	31	210	---	<150	2.6
16	---	10.5	31	210	---	E	
17	---	8.7	31	210			3.30
18	---	6.2	31	220			3.25
19	---	5.1	31	240			3.20
20	---	>4.3	30	250			2.95
21	---	3.9	30	(275)			3.00
22	---	3.8	30	<300			2.95
23	---	3.5	30	<310			2.85

Time: 0.0°.

Sweep: 1.4 Mc to 16.0 Mc in 40 seconds.

Table 54

Formosa, China (25.0° N, 121.5° E)							
January 1960							
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00	8.0	29	260				2.85
01	6.4	28	260				2.90
02	6.0	27	260				2.95
03	5.1	29	260				3.00
04	3.9	27	290				2.80
05	3.6	29	<310				2.70
06	4.0	30	300				2.65
07	8.8	30	260				3.00
08	11.4	26	240				3.15
09	13.2	29	240				3.00
10	14.4	29	240			4.0	3.00
11	15.3	31	230			4.1	2.80
12	>16.0	30	230			4.4	2.80
13	16.6	30	230			4.3	2.80
14	---	>16.5	30	240	---	4.1	2.75
15	---	16.8	29	240	---	3.9	2.75
16	---	16.6	30	240	---	3.7	2.80
17	---	15.2	30	240	---	(3.0)	2.85
18	---	14.3	29	240	---	(3.2)	2.85
19	---	14.2	31	240	---	2.5	2.90
20	---	14.8	31	240			2.90
21	---	>13.0	31	240			3.00
22	---	10.5	30	250			2.80
23	---	9.2	30	260			2.80

Time: 120.0°E.

Sweep: 1.1 Mc to 19.5 Mc in 15 minutes, manual operation.

Table 55

Falkland Is (51.7° S, 72.8° W)									January 1960
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		9.3 20	320						2.4
01		9.2 21	310				1.4		2.35
02		8.7 23	310				1.7		2.4
03		8.2 21	330		---	E	1.2		2.4
04		8.4 20	300		---	E			2.3
05	480	9.2 23	265	---	120	---	2.5		2.2
06	420	10.2 21	250	---	110 (2.90)		(3.7)		2.25
07	415	10.4 26	250	---	110 3.20		(4.3)		2.3
08	390	10.4 26	245	5.2	105 3.60		(5.0)		2.4
09	400	11.1 23	240	---	105 3.75		(4.8)		2.35
10	370	11.4 25	235	---	100 3.85		(5.5)		2.5
11	365	11.1 25	225	5.8	100 3.85		(4.8)		2.5
12	360	10.9 24	230	---	100 3.95		(5.0)		2.6
13	350	10.4 24	225	5.6	105	---	4.8		2.55
14	360	10.1 23	220	---	105 3.80		4.8		2.6
15	365	9.2 28	225	---	105 3.70		(4.5)		2.65
16	350	8.9 28	240	---	105 (3.50)		(4.5)		2.75
17	325	8.5 29	245		110 3.25		(4.3)		2.8
18	380	8.3 27	250		115 2.80		(4.5)		2.85
19	280	8.3 23	265		120 E		(4.3)		2.7
20		8.0 24	295	---	E		(2.5)		2.5
21		8.6 24	320	---	---	---	<1.5		2.35
22		9.0 22	320						2.3
23		9.5 17	340				1.8		(2.3)

Time: 0.0°.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 56

Inverness, Scotland (57.4° N, 4.2° W)									October 1959
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		(4.5) 29	310						<1.3 2.45
01		(4.4) 30	310						<1.1 2.45
02		>3.7 31	300						<1.1 2.50
03		(3.6) 30	300						<1.2 2.50
04		(3.4) 30	300						<1.1 2.55
05		(3.3) 29	280						<1.6 2.65
06		3.6 31	260						<1.6 2.65
07		5.0 31	250		---	---	1.80		2.95
08	---	6.7 31	250	---	120		2.30		2.90
09	---	7.6 31	240	---	115		2.70		3.00
10	---	8.7 31	240	---	115		2.90	2.8	2.95
11	---	10.0 31	240	---	110		3.10		2.90
12	---	10.5 31	235	---	110		3.10		2.90
13	---	10.5 31	240	---	110		3.10		2.90
14	---	10.5 31	240		110		2.95		2.90
15		10.3 31	240		110		2.75		2.90
16		10.0 31	250		115		2.40		2.90
17		>8.8 30	240		120		1.90		2.95
18		8.5 31	240					<1.8	2.80
19		>7.5 31	240					<1.6	2.90
20		(6.5) 31	240					<1.6	2.85
21		5.6 30	250					<1.6	2.60
22		(5.0) 30	290					<1.6	2.60
23		>4.4 30	300					<1.6	2.55

Time: 0.0°.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 57

Inverness, Scotland (57.4° N, 4.2° W)									September 1959
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		(4.7) 29	330						<1.3 2.40
01		>3.8 29	315						1.3 2.40
02		3.8 28	310						(1.4) 2.35
03		(3.8) 28	310						<1.4 2.40
04		3.6 27	305						(1.2) 2.40
05		3.6 28	300						2.55
06	---	4.4 30	280	---	115		1.90		2.75
07	---	5.4 27	255	---	115		2.45		2.95
08	---	6.1 30	250	---	115		2.80		2.90
09	---	6.5 29	250	---	110		3.15		2.80
10	(480)	6.7 27	225	4.8	110		3.30		2.80
11	(500)	6.8 30	230	---	110		3.50		2.70
12	(480)	7.2 29	230	5.0	105		3.50		2.70
13	(530)	7.3 29	230	5.3	105		3.50		2.75
14	---	7.3 30	240	---	110		3.50		2.75
15	---	7.6 30	240	---	110		3.30		2.75
16	---	7.6 30	250	---	110		3.00		2.80
17		7.9 28	250		115		2.65		2.85
18		7.8 30	250		120		2.15		2.90
19		8.0 30	250		---		1.90		2.80
20		7.2 28	250					<1.6	2.75
21		5.9 29	200					<1.6	2.60
22		4.9 30	295					<1.6	2.50
23		(4.7) 29	300					<1.6	2.40

Time: 0.0°.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 58

Wakkanai, Japan (45.4° N, 141.7° E)									July 1959
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		7.6 26	300						3.3 2.50
01		7.3 26	305						3.5 2.50
02		7.2 26	295						3.4 2.55
03		6.7 26	300						3.4 2.60
04	---	6.6 27	300	---			1.65		3.4 2.60
05	(380)	7.3 28	260	4.0			2.40		3.5 2.55
06	370	8.0 28	255	4.4			2.90		5.0 2.70
07	370	8.3 28	260	4.8			3.25		5.5 2.60
08	370	7.9 28	225	(5.2)			3.50		6.5 2.70
09	410	7.4 26	250	5.4			3.65		6.7 2.60
10	430	7.8 25	245	5.4			3.70		7.3 2.60
11	430	7.7 26	250	5.5			3.70		6.2 2.60
12	430	7.8 27	250	5.5			3.70		6.0 2.60
13	420	7.8 25	250	5.6			3.70		5.8 2.60
14	425	7.6 26	250	5.5			3.60		5.8 2.60
15	420	7.6 28	250	5.4			3.60		5.6 2.60
16	405	7.5 29	250	5.0			3.50		5.9 2.65
17	370	7.5 29	260	---			3.05		5.8 2.70
18	---	7.6 30	270	---			2.50		4.4 2.70
19		7.6 30	280				---		4.6 2.70
20		(8.1) 29	290						4.0 (2.65)
21		(8.1) 27	300						4.2 (2.60)
22		(8.0) 27	300						3.5 (2.55)
23		(7.8) 27	300						3.5 (2.55)

Time: 135.0°E.

Sweep: 1.0 Mc to 20.7 Mc in 1 minute

Table 59

Akita, Japan (39.7° N, 140.1° E)									July 1959
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		8.2 31	305						3.8 2.60
01		7.9 31	310						3.1 2.60
02		7.9 31	300						3.1 2.60
03		7.4 31	290						3.0 2.65
04		7.0 30	310						2.5 2.60
05	(420)	7.4 31	270	---			2.05		2.6 2.65
06	350	8.5 31	255	4.6			2.80		4.3 2.65
07	350	9.1 31	245	5.0			3.25		6.6 2.70
08	345	9.0 30	240	(5.3)			3.55		6.8 2.70
09	355	8.4 28	240	5.6			3.80		7.3 2.70
10	400	8.4 28	245	(5.7)			3.95		7.5 2.60
11	405	8.5 29	240	5.8			4.00		7.2 2.60
12	400	8.8 28	245	5.8			4.05		8.1 2.60
13	400	8.9 27	245	5.8			3.95		7.9 2.60
14	390	8.8 27	240	5.7			3.95		6.8 2.65
15	395	8.6 28	245	5.5			3.70		6.2 2.70
16	375	8.6 28	250	5.2			3.50		5.8 2.70
17	345	8.5 28	250	4.8			3.05		5.6 2.80
18	305	8.5 28	265	---			2.45		5.7 2.80
19		8.2 30	290						6.2 2.70
20		8.6 28	290						5.1 2.60
21		8.4 29	320						6.0 2.60
22		8.4 29	310						5.6 2.50
23		8.2 28	310						4.5 2.55

Time: 135.0°E.

Sweep: 1.0 Mc to 20.0 Mc in 20 seconds.

Table 60

Tokyo, Japan (35.7° N, 139.5° E)								July 1959
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(8.6) 30	330				4.5	(2.60)
01		8.1 29	300				3.8	2.65
02		8.0 29	295				3.7	2.70
03		7.5 29	300				3.1	2.65
04		7.0 30	300					2.65
05	---	7.3 30	270			----		2.70
06	(350)	8.6 30	250	---		(2.75)	3.8	2.70
07	340	9.1 28	250	---		(3.25)	5.2	2.75
08	325	9.4 26	250	---		3.60	6.9	2.75
09	<355	8.9 24	250	---		(3.85)	6.5	2.70
10	390	8.8 25	(230)	---		(3.90)	6.6	2.55
11	<400	9.3 28	205	(5.8)		(4.00)	7.6	2.55
12	390	9.4 28	(245)	(5.8)		4.05	6.4	2.60
13	390	9.7 26	(240)	(5.8)		(4.00)	5.0	2.70
14	360	9.7 26	(245)	(5.6)		(4.00)	5.8	2.70
15	375	9.4 29	245	(5.3)		(3.85)	4.9	2.65
16	360	9.0 30	250	(5.0)		(3.55)	5.1	2.70
17	350	9.2 29	255	---		(3.10)	5.8	2.75
18	305	9.0 28	270			(2.40)	4.8	2.80
19		8.6 28	295				4.6	2.75
20		8.6 28	300				4.4	2.60
21		(8.4)	28 340				5.0	(2.50)
22		8.6 27	315				4.8	2.55
23		8.6 29	350				4.5	(2.55)

Table 61

Yamagawa, Japan (31.2° N, 130.6° E)

July 1959

Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	9.4	26	345				3.5	2.50
01	9.4	29	300				3.2	2.60
02	9.0	30	300				3.7	2.60
03	8.4	28	290				3.2	2.70
04	7.5	30	290				3.1	2.60
05	7.2	29	310			----	3.0	2.55
06	8.0	30	265			2.20	2.8	2.75
07	---	9.0	30	250	---		3.00	2.85
08	---	9.2	29	250	---		3.40	2.85
09	(375)	9.0	28	250	(5.5)		3.75	2.65
10	400	9.2	30	250	6.0		3.95	2.45
11	410	9.6	29	250	6.2		4.10	2.50
12	400	9.9	29	235	6.0		4.15	2.50
13	400	10.0	28	230	6.0		4.20	2.55
14	400	10.4	29	240	5.9		4.10	2.50
15	400	10.5	30	250	5.8		4.00	2.55
16	370	10.4	30	250	5.6		3.75	2.55
17	350	10.4	30	250	5.3		3.40	2.65
18	325	10.4	30	270	---		2.80	2.70
19	9.6	29	290			----	4.7	2.70
20	8.8	29	300				4.8	2.55
21	8.9	30	325				3.6	2.40
22	9.2	30	340				3.7	2.45
23	9.1	29	335				3.1	2.45

Time: 135.0°E.

Sweep: 1.0 Mc to 20.3 Mc in 30 seconds.

Table 63

Inverness, Scotland (57.4° N, 4.2° W)

April 1959

Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	6.3	29	310				<1.4	2.35
01	6.0	29	320				1.1	2.35
02	5.5	29	340				1.1	2.3
03	5.0	29	330				<1.2	2.3
04	4.8	28	320				(1.0)	2.4
05	5.0	29	295			110 1.70		2.55
06	6.0	28	265			110 2.20		2.7
07	6.5	29	250	---		110 2.70		2.65
08	>7.0	27	245	---		110 3.10		2.7
09	7.2	29	240	---		110 3.35		2.65
10	7.8	30	235	5.1		110 3.55		2.65
11	8.2	30	235	(5.3)		110 3.70		2.6
12	8.6	29	235	5.3		110 3.70		2.6
13	8.6	29	240	5.4		110 3.70		2.6
14	8.8	30	240	5.4		105 3.65		2.6
15	8.8	29	240	---		110 3.45		2.6
16	8.8	30	245	---		110 3.20		2.6
17	8.8	29	250	---		110 2.95		2.65
18	8.8	28	255			115 2.50		2.7
19	8.4	29	260			<140 2.00		2.7
20	8.2	27	260			----	<1.6	2.65
21	7.3	28	265				<1.6	2.5
22	6.8	29	280				<1.6	2.45
23	5.7	29	<310				<1.6	2.45

Time: 0.0°.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 65

Concepcion, Chile (36.6° S, 73.0° W)

April 1959

Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	8.8	24	280					2.80
01	8.6	25	280					2.78
02	8.4	25	270					2.90
03	7.2	25	265					2.90
04	6.3	25	245					2.72
05	6.0	25	290					2.55
06	6.8	25	290			---	E	2.75
07	10.8	25	240			119 2.40		3.20
08	12.9	23	230			109 3.00	3.0	3.20
09	13.9	22	230			108 3.40	3.6	3.15
10	14.3	23	220			107 (3.60)	4.0	3.00
11	14.6	24	220			109 3.70	4.0	2.90
12	14.85	24	220			109 3.80	3.9	2.85
13	---	15.6	25	220		111 3.75	4.2	2.80
14	---	15.75	24	230		111 3.60	4.2	2.85
15	---	15.6	26	240		113 3.35	4.0	2.90
16	---	15.4	27	250		111 2.80	4.0	2.95
17	---	14.6	27	250		---	4.4	2.95
18	---	14.0	27	245			3.6	2.85
19	---	12.7	27	255			2.7	2.90
20	---	11.9	25	250			2.2	2.80
21	---	>10.5	24	250				2.80
22	---	9.7	25	270				2.75
23	---	9.2	25	280				

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 62

De Bilt, Holland (52.1° N, 5.2° E)

June 1959

Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00	7.4	30	300				2.6	2.55
01	7.1	30	300				2.8	2.55
02	7.0	30	300				2.7	2.50
03	6.6	30	300				3.0	2.55
04	---	6.9	30	280	---	120 2.0	3.9	2.65
05	(400)	7.4	30	250	4.0	100 2.5	3.8	2.65
06	430	7.6	30	240	4.7	100 3.0	4.0	2.65
07	375	8.0	28	230	5.0	100 3.3	4.4	2.70
08	370	7.9	28	220	5.3	100 3.5	5.0	2.70
09	425	>7.8	28	220	5.5	100 3.7	5.0	2.60
10	410	8.0	29	225	5.7	100 3.8	5.0	2.60
11	415	7.8	30	215	5.5	100 3.9	5.3	2.60
12	430	7.8	30	210	5.6	100 4.0	4.9	2.55
13	420	8.0	28	210	5.6	100 3.9	4.8	2.60
14	415	7.6	28	220	5.5	100 3.8	4.6	2.60
15	405	7.6	30	220	5.4	100 3.7	4.4	2.70
16	400	7.6	29	225	5.2	100 3.4	4.4	2.70
17	(400)	7.6	30	250	5.0	100 3.1	4.8	2.70
18	(340)	7.6	29	250	---	105 2.7	4.8	2.80
19	---	7.7	28	270	---	120 2.2	4.0	2.85
20	---	7.8	30	280	---	---	4.0	2.80
21	---	8.0	30	280	---	---	3.4	2.70
22	---	7.8	30	290	---	---	3.0	2.60
23	---	7.8	29	300	---	---	2.4	2.55

Time: 0.0°.

Sweep: 1.4 Mc to 16.0 Mc in 40 seconds.

Table 64

Moscow, U.S.S.R. (55.5° N, 37.3° E)

April 1959

Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	6.1	29	330				<1.2	2.40
01	5.6	30	300			E	<1.2	2.40
02	5.3	30	325			E		2.40
03	5.2	29	315			E		2.50
04	5.1	29	300			1.30		2.60
05	5.8	30	270			2.00		2.80
06	6.2	30	250			2.55		2.80
07	(485)	6.9	29	240	4.9	3.00		2.70
08	385	8.3	30	230	5.0	3.30		2.70
09	390	9.4	30	230	5.3	3.50		2.70
10	355	10.3	30	225	5.7	3.60	3.5	2.70
11	320	11.0	30	230	6.0	3.70		2.65
12	370	11.1	30	225	6.0	3.70		2.65
13	350	11.0	30	230	6.1	3.60		2.70
14	340	10.6	30	230	(5.8)	3.50		2.70
15	(330)	10.4	30	240		3.30		2.70
16	10.2	30	245			3.00		2.70
17	10.0	30	250			2.60		2.70
18	9.6	30	255			2.10		2.80
19	9.4	30	250			1.55		2.75
20	8.6	30	255			E	<1.3	2.70
21	7.5	30	270				<1.3	2.65
22	7.0	30	280				<1.3	2.60
23	6.5	30	300				<1.3	2.50

Time: 30.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 66

Port Lockroy (64.8° S, 63.5° W)

April 1959

Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	5.0	22	<350				1.0	2.20
01	4.9	22	360					2.30
02	4.2	20	350			----		2.20
03	3.9	15	355			----		2.15
04	3.8	20	370			----		2.20
05	3.8	19	355			----		2.25
06	3.8	18	325			----		2.35
07	5.6	20	<260			1.70		2.60
08	7.4	22	240			2.00		3.00
09	10.8	20	225			2.30	2.9	3.05
10	11.6	20	230			2.55		3.10
11	13.2	24	225			2.80		3.10
12	13.6	22	225			2.85		3.15
13	13.5	27	230			2.80		3.10
14	12.9	25	225			2.80		3.15
15	11.8	22	225			2.50		3.10
16	10.9	23	235			2.20		3.15
17	10.8	19	235			1.80		3.10
18	9.2	22	230			----	1.3	3.10
19	7.4	21	235			----	1.0	3.00
20	6.6	22	240			----	1.1	2.85
21	6.0	22	<260			----		2.65
22	5.6	21	300			----		2.30
23	5.3	21	350			----		<2.20

Time: 60.0°W.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 67

Calcutta, India (23.0° N, 88.6° E)								March 1959	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	D	23	250					(3.5)	
01	>12.0	21	240					(3.8)	
02	(11.4)	21	250					3.7	
03	(10.3)	19	250					3.7	
04	(7.0)	19	250					3.6	
05	>7.0	20	260					3.5	
06	>7.0	21	270		---	---		3.5	
07	>11.0	23	250		100	2.8		3.5	
08	D	24	250		100	3.4		(3.55)	
09	D	23	<250	---	100	(3.7)		----	
10	(350)	D	21	250	(9.2)	100	(3.8)		
11	(380)	D	21	250	(9.5)	100	>4.0		
12	(400)	D	19	250	(9.8)	100	>4.0		
13	(400)	D	19	250	(9.0)	100	>4.0		
14	(400)	D	19	250	(8.5)	100	>4.0		
15	(360)	D	18	250	(8.0)	100	3.9		
16	(350)	D	18	250	(8.0)	100	3.5		
17	---	D	24	250	---	100	3.0		
18		D	24	270			2.1		
19		D	24	300			2.2		
20		D	23	290			2.1		
21		D	23	250					
22		D	23	250				----	
23		D	23	250					

Time: 90.0°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 68

Tsamab, South W. Africa (19.2° S, 17.7° E)								March 1959	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00		7.80	30	240					2.85
01		6.70	29	245					2.85
02		5.76	28	235					2.78
03		5.30	28	240					2.82
04		4.77	29	250					2.90
05		4.46	28	247					2.85
06		6.94	30	250	140	1.74			2.96
07		10.02	31	233	110	2.74			3.16
08		11.31	31	225	105	3.38			3.00
09		12.10	31	220		3.72			2.84
10		12.80	27	215		3.98	4.0		2.70
11		13.30	30	215		4.14			2.65
12	---	13.58	31	220	---	4.19			2.60
13	---	13.70	31	222	---	4.18			2.56
14		13.61	31	226		4.04			2.54
15		13.50	30	232		3.75	3.9		2.55
16		13.31	30	240		3.40	4.2		2.59
17		12.92	29	247	115	2.76	3.5		2.65
18		12.72	31	250		---	2.5		2.72
19		12.13	27	242			1.8		2.75
20		11.22	30	240			2.3		2.79
21		10.60	29	235			1.8		2.83
22		9.82	30	239			1.7		2.85
23		8.88	30	238			1.6		2.90

Time: 15.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 69

Rarotonga I. (21.2° S, 159.8° W)								March 1959	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	(10.2)	12						(2.60)	
01	(9.8)	16						(2.55)	
02	9.0	24						2.45	
03	8.9	26					1.2	2.45	
04	9.0	26					1.1	2.50	
05	8.8	28						2.60	
06	(10.9)	21					1.3	(2.90)	
07	12.4	28					3.0	3.00	
08	12.9	28					3.7	2.80	
09	13.3	30					4.0	2.70	
10	14.4	29					4.3	2.60	
11	15.4	30					4.7	2.60	
12	15.8	28					4.7	2.55	
13	16.0	25					4.6	2.50	
14	(16.0)	24					4.3	(2.50)	
15	(15.7)	23					4.0	(2.50)	
16	(15.4)	23					3.8	2.50	
17	(15.3)	23					3.5	2.50	
18	(14.7)	21					3.1	(2.55)	
19	(13.3)	13					2.8	(2.55)	
20	(13.4)	9					3.0	(2.55)	
21	(11.0)	6					1.6	(2.45)	
22	(12.7)	10					<1.4	(2.60)	
23	(11.3)	9						(2.55)	

Time: 165.0°W.

Sweep: 1.0 Mc to 22.0 Mc in 7 seconds.

Table 70

Christchurch, New Zealand (43.6° S, 172.8° E)								March 1959	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		(7.1)	15	<300			<1.7	(2.45)	
01		(7.0)	17	300			2.6	(2.40)	
02		(6.8)	21	<290			2.8	(2.35)	
03		(6.8)	21	280			<1.6	(2.40)	
04		(6.0)	23	270			<1.4	(2.40)	
05		(5.6)	24	<280			<1.4	(2.40)	
06	---	(5.2)	24	300	---	---	<1.7	(2.50)	
07	---	5.6	16	260	---	110	2.3	2.60	
08	---	6.3	16	250	---	110	2.9	2.70	
09	(400)	7.5	16	230	4.8	105	3.4	3.5	2.65
10	(520)	(8.8)	20	220	4.9	100	3.6	3.8	2.70
11	(430)	9.3	24	220	5.4	100	(3.8)		2.60
12	(390)	10.0	23	220	6.0	100	3.9		2.60
13	(370)	(11.0)	26	230	5.6	100	4.0		(2.65)
14	(400)	(10.5)	26	230	5.6	100	3.9		(2.60)
15	---	10.6	28	230	---	105	3.8		2.60
16	---	(9.3)	14	240	---	105	3.5		(2.60)
17	---	9.0	10	250	---	105	3.1		(2.65)
18		(8.2)	6	250		110	2.5		(2.70)
19		(8.8)	10	250		100	(1.6)	<1.5	(2.65)
20		(8.2)	6	250				<1.8	(2.55)
21		(7.9)	11	250				1.8	(2.50)
22		(7.2)	8	260				<1.7	(2.40)
23		(7.0)	10	<300				<1.6	(2.45)

Time: 180.0°E.

Sweep: 1.0 Mc to 22.0 Mc in 7 seconds.

Table 71

Campbell I. (52.5° S, 169.2° E)								March 1959	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		6.2	25				3.1	2.40	
01	(6.0)	25					3.1	(2.35)	
02	6.0	24					2.0	2.40	
03	(5.2)	27					2.8	(2.40)	
04	4.7	27					3.1	2.35	
05	4.6	28					<2.2	2.50	
06	6.0	25					2.80	2.50	
07	7.0	29					2.85	2.80	
08	7.6	27					2.85	2.85	
09	8.5	27					3.4	2.80	
10	8.5	25					2.70	2.70	
11	9.3	28					2.70	2.70	
12	10.1	29					2.60	2.60	
13	10.4	30					2.60	2.60	
14	9.9	29					2.60	2.60	
15	9.7	28					2.55	2.55	
16	9.8	26					2.65	2.65	
17	9.0	25					2.60	2.60	
18	(9.5)	25					1.7	(2.65)	
19	(9.2)	30					1.7	(2.60)	
20	(8.1)	25					1.9	2.45	
21	(7.6)	28					1.6	(2.45)	
22	6.8	27					2.6	(2.35)	
23	6.2	26					2.5	2.40	

Time: 165.0°E.

Sweep: 1.0 Mc to 13.0 Mc in 2 minutes.

Table 72

Port Lockroy (64.8° S, 63.5° W)								March 1959	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		7.6	27	330			2.2	2.40	
01		7.4	22	320			1.5	2.40	
02		6.7	21	<340			>1.5	2.40	
03		6.4	18	350			1.6	2.30	
04		6.2	21	<370			2.3	2.35	
05		6.1	25	345			1.9	2.40	
06		6.8	28	300			1.65	1.9	2.55
07		7.6	30	255			2.10	2.5	<2.75
08		8.1	30	250			2.60	3.0	<2.85
09		9.3	29	240			2.85	3.6	2.85
10		10.9	30	240			(3.00)	4.2	2.85
11		11.1	31	240			3.20	3.7	2.90
12		12.0	30	235			3.30	3.6	2.90
13		11.7	31	235			3.25	3.4	2.95
14		11.1	31	235			3.20		2.95
15		10.4	28	240			3.00	3.0	2.95
16		10.3	27	240			2.80		3.00
17		10.4	27	245			2.50		2.95
18		10.3	23	250			2.00	2.0	3.00
19		9.2	23	250			1.50	1.9	2.90
20		8.9	23	250			---	1.6	2.80
21		8.5	27	265			---	1.6	2.60
22		8.2	25	285			---	1.3	2.50
23		7.8	22	315			---	1.2	2.45

Time: 60.0°W.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

US-COMM-NBS-EL



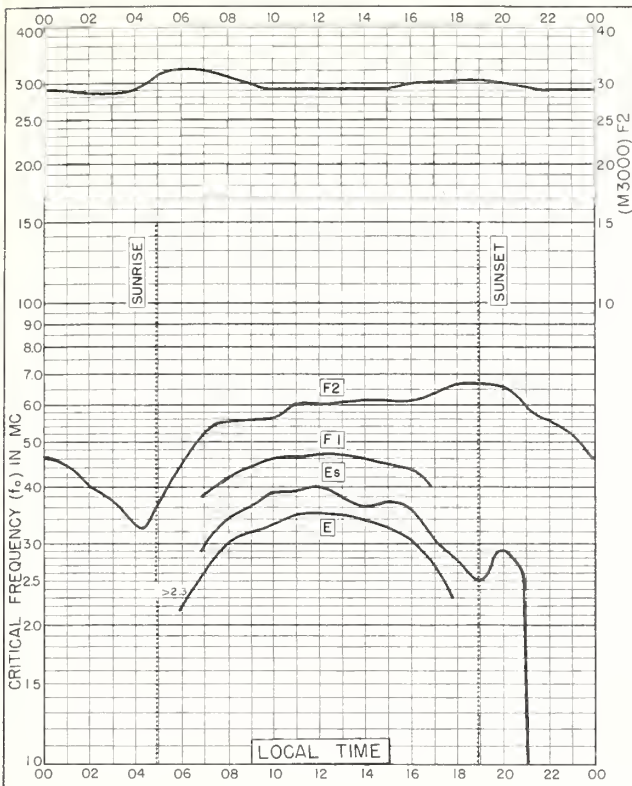


Fig. 1. WASHINGTON, D. C.  
38.7°N, 77.1°W

MAY 1961

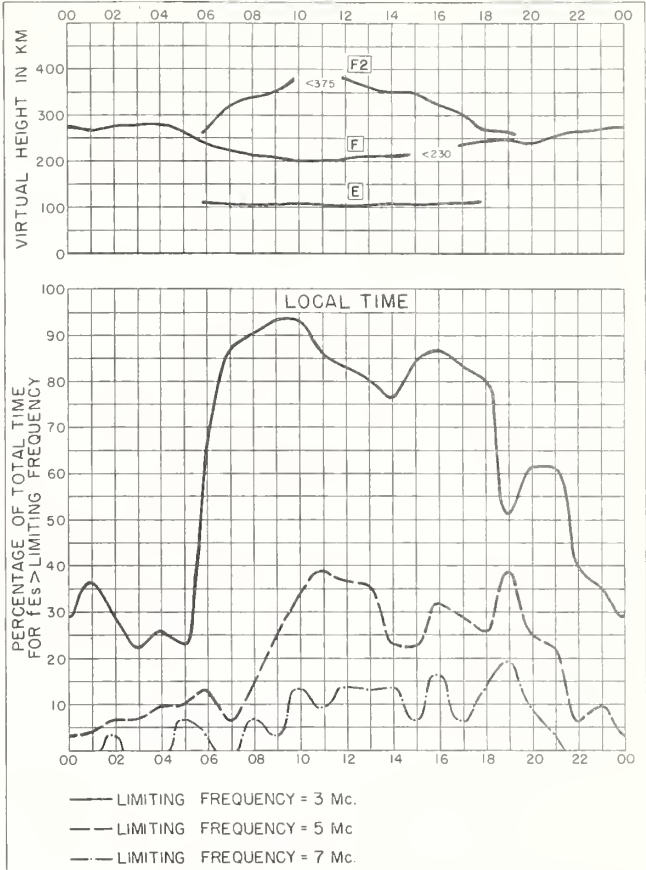


Fig. 2. WASHINGTON, D. C.

MAY 1961



Fig. 3. TALARA, PERU  
4.6°S, 81.3°W

MAY 1961

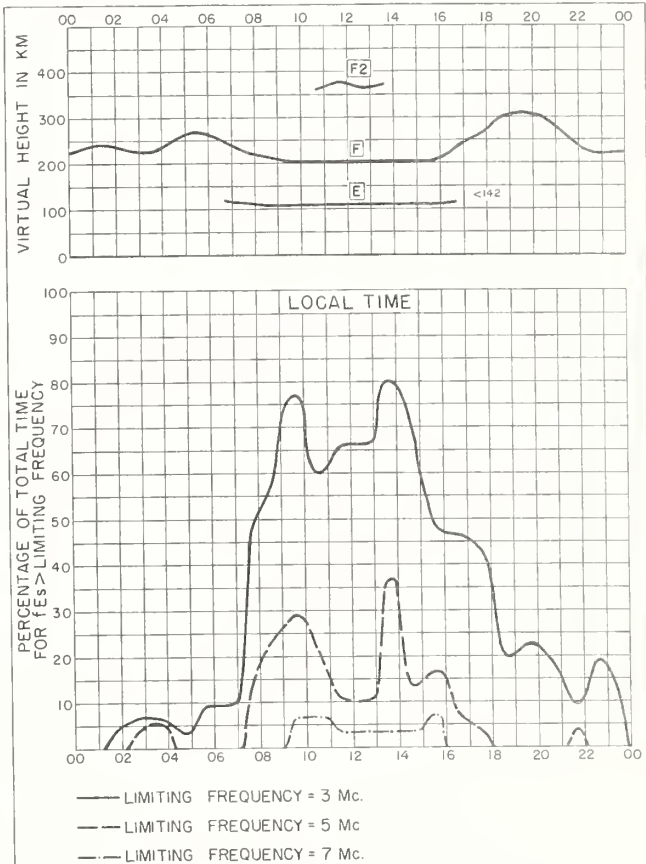


Fig. 4. TALARA, PERU

MAY 1961

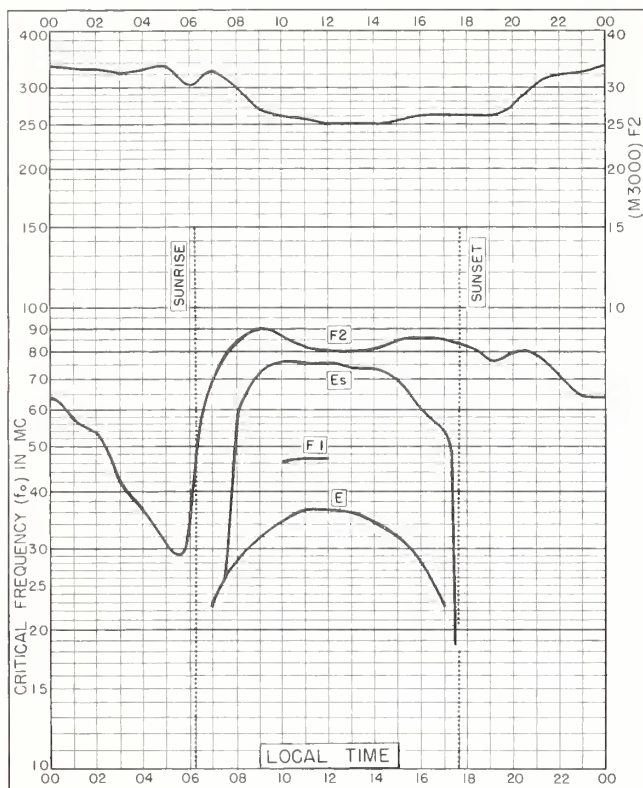


Fig. 5. HUANCAYO, PERU  
12.0°S, 75.3°W

MAY 1961

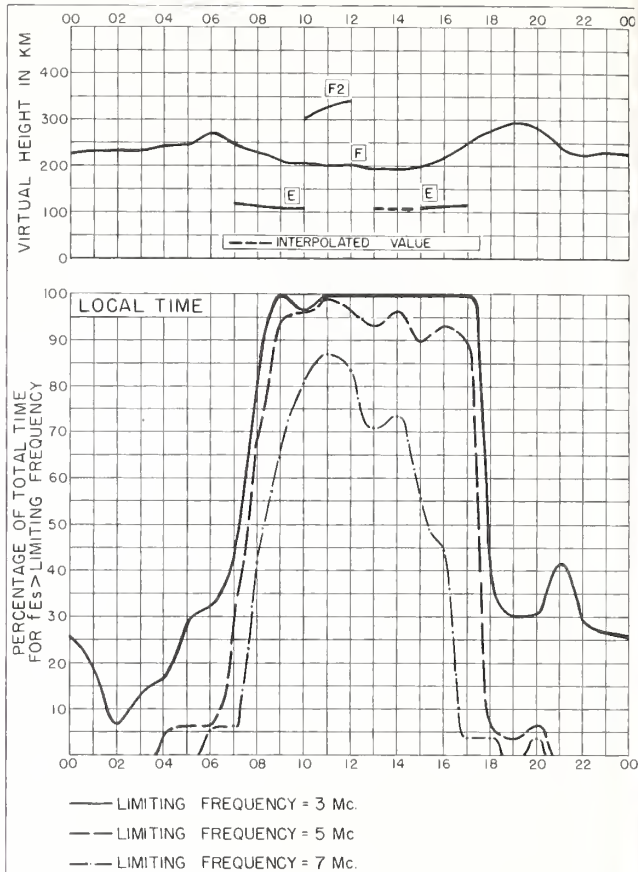


Fig. 6. HUANCAYO, PERU

MAY 1961

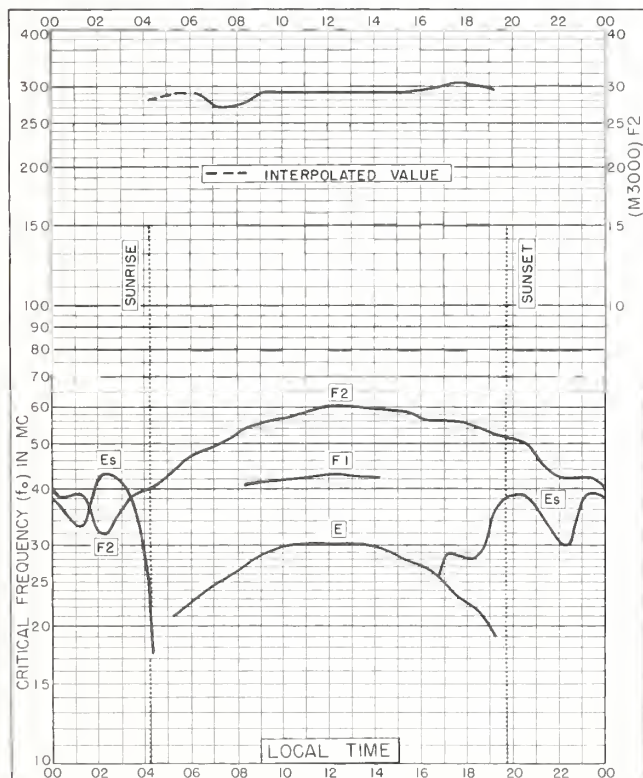


Fig. 7. TROMSØ, NORWAY  
69.7°N, 19.0°E

APRIL 1961

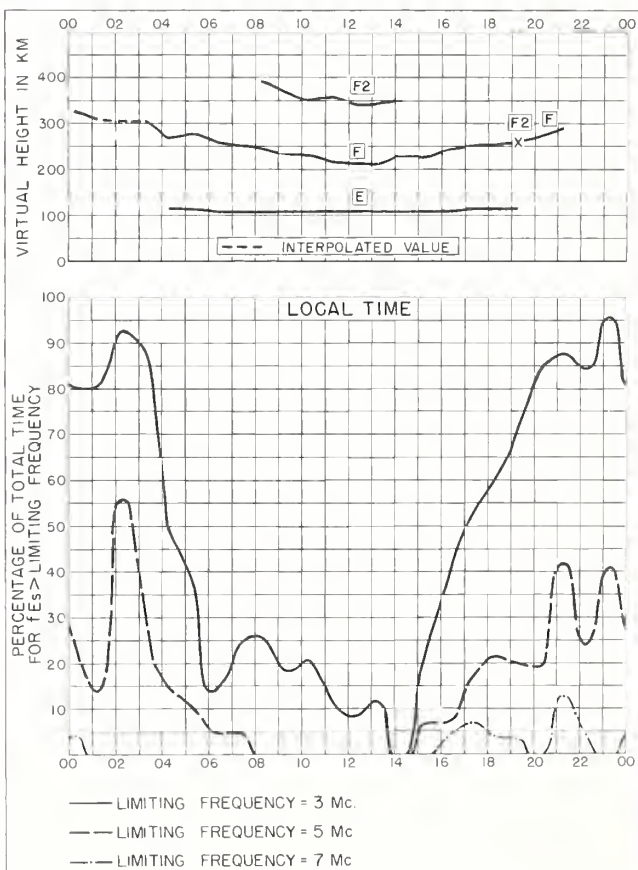


Fig. 8. TROMSØ, NORWAY

APRIL 1961



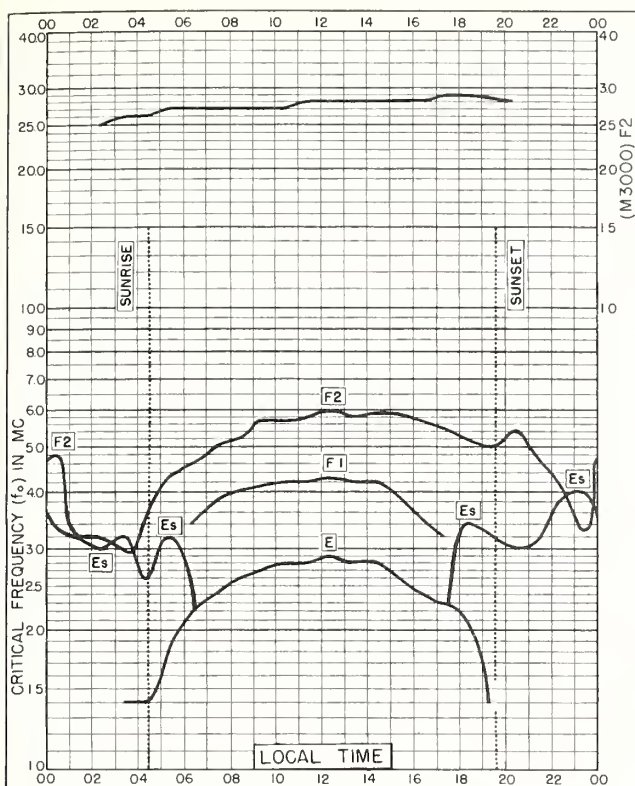


Fig. 9. KIRUNA, SWEDEN  
67.8°N, 20.3°E

APRIL 1961

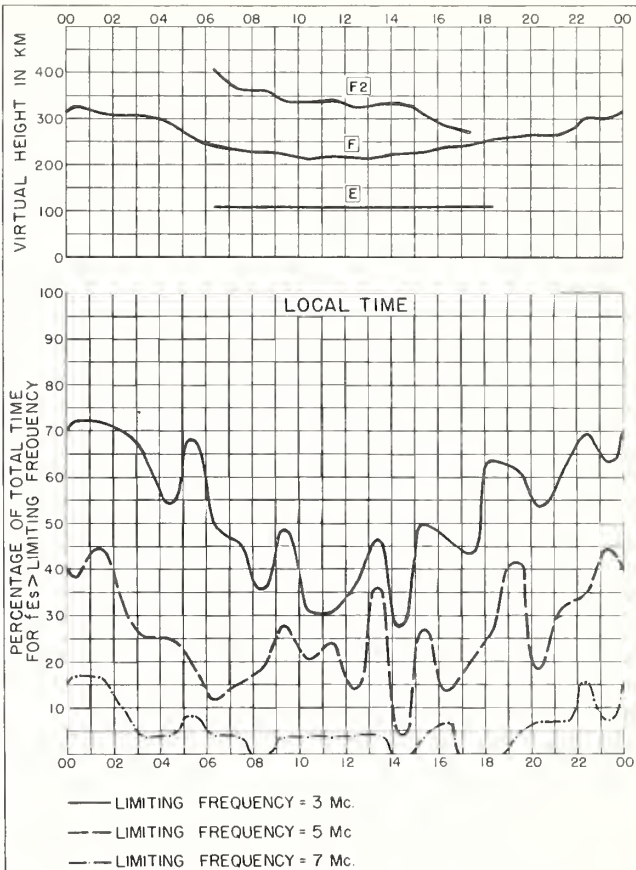


Fig. 10. KIRUNA, SWEDEN

APRIL 1961

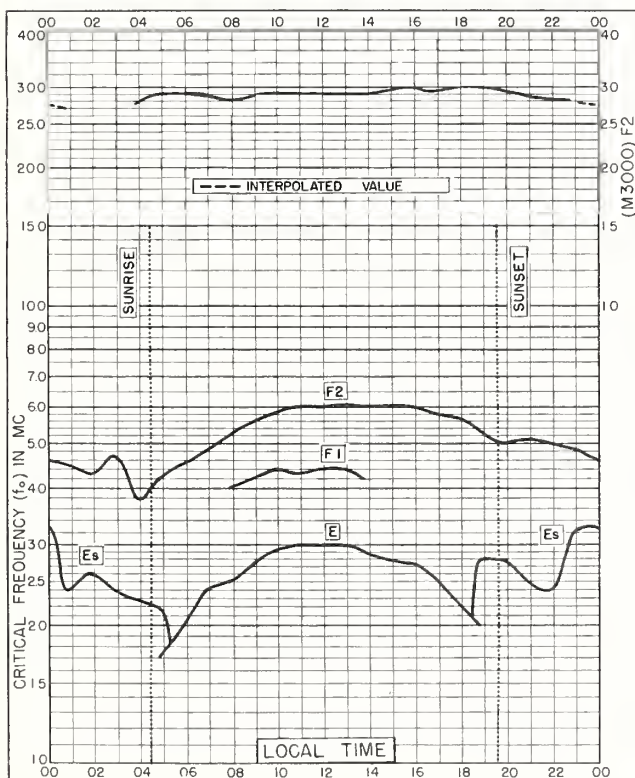


Fig. 11. SODANKYLA, FINLAND  
67.4°N, 26.6°E

APRIL 1961

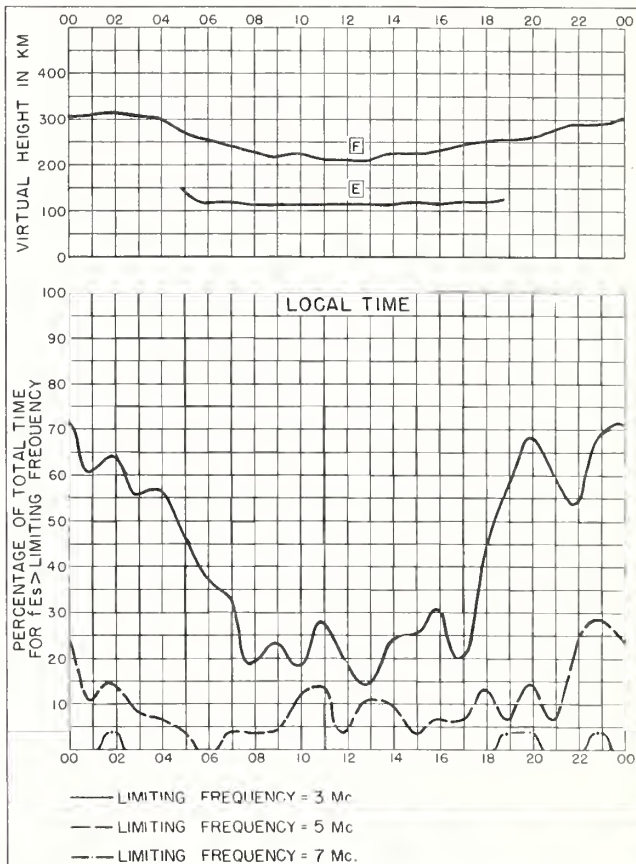


Fig. 12. SODANKYLA, FINLAND

APRIL 1961



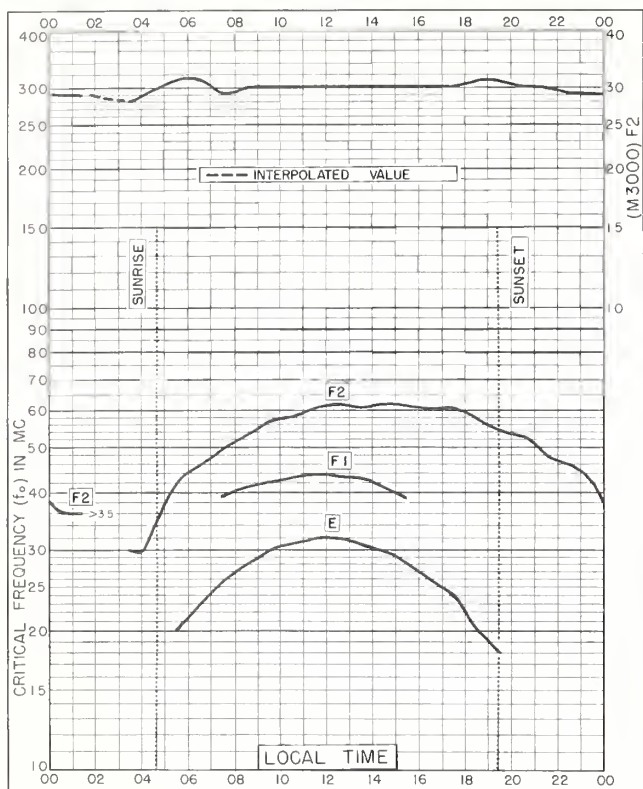


Fig. 13. LULEÅ, SWEDEN  
65.6°N, 22.1°E

APRIL 1961

NBS 503

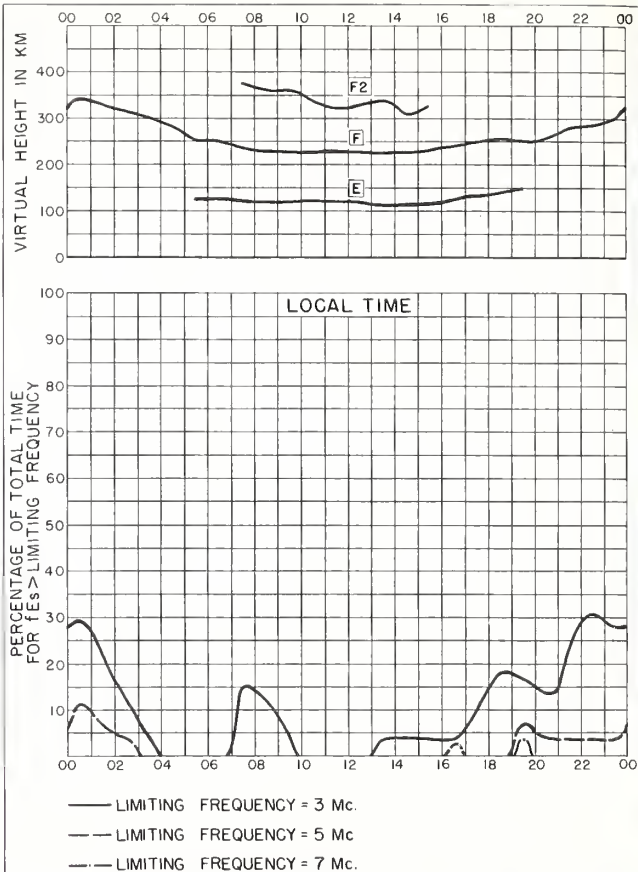


Fig. 14. LULEÅ, SWEDEN

APRIL 1961

NBS 490

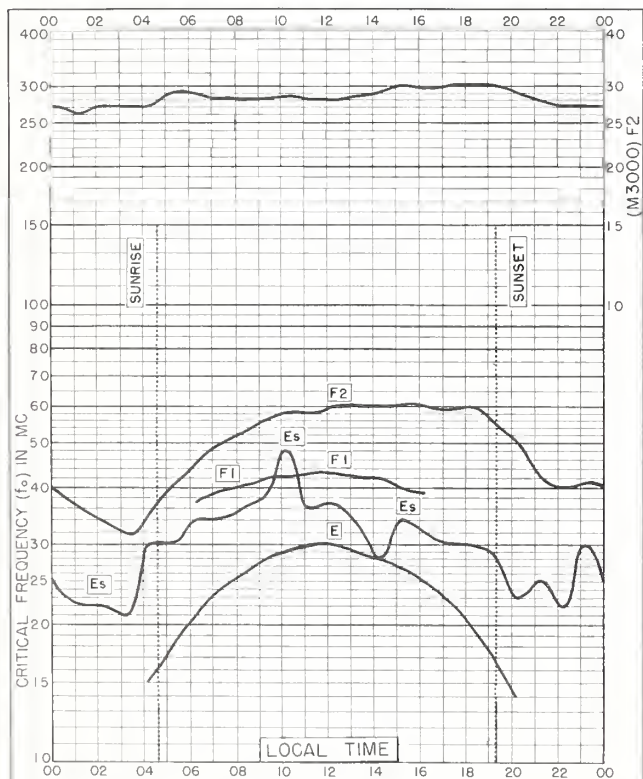


Fig. 15. LYCKSELE, SWEDEN  
64.6°N, 18.8°E

APRIL 1961

NBS 503

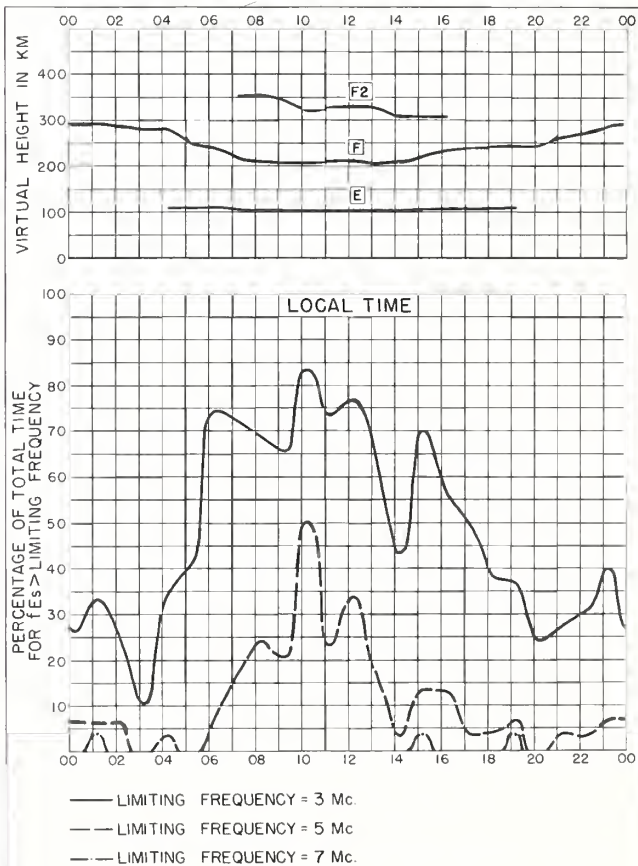


Fig. 16. LYCKSELE, SWEDEN

APRIL 1961

NBS 490

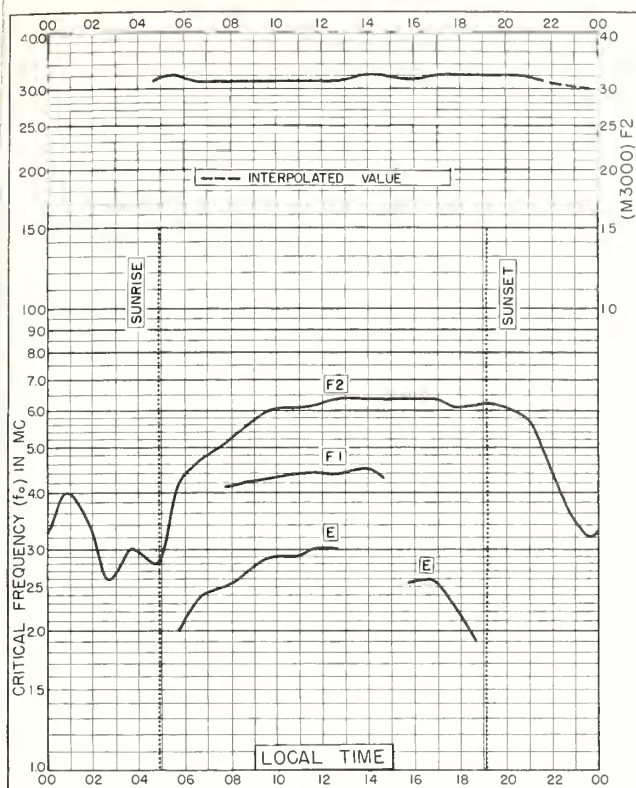


Fig. 17. NURMIJARVI, FINLAND  
60.5°N, 24.6°E

APRIL 1961

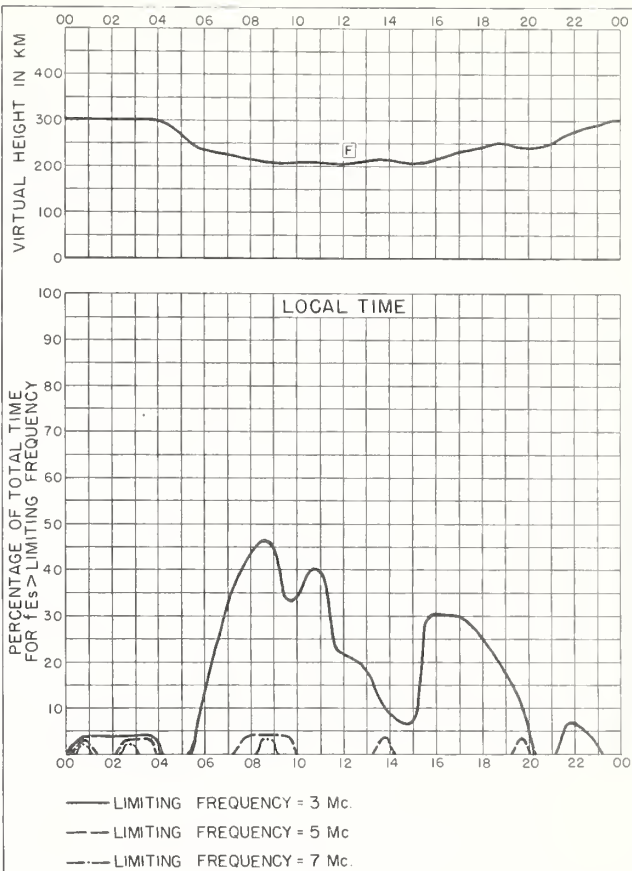


Fig. 18. NURMIJARVI, FINLAND

APRIL 1961

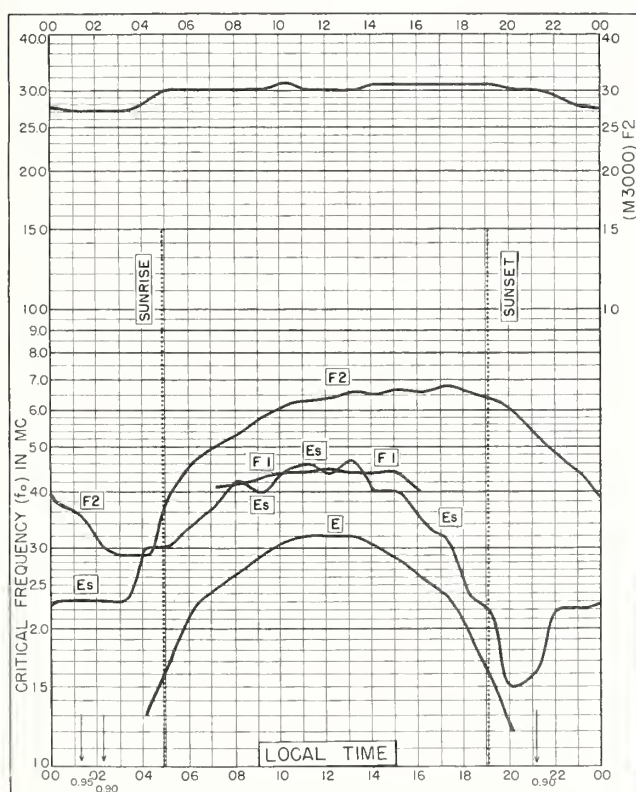


Fig. 19. UPSALA, SWEDEN  
59.8°N, 17.6°E

APRIL 1961

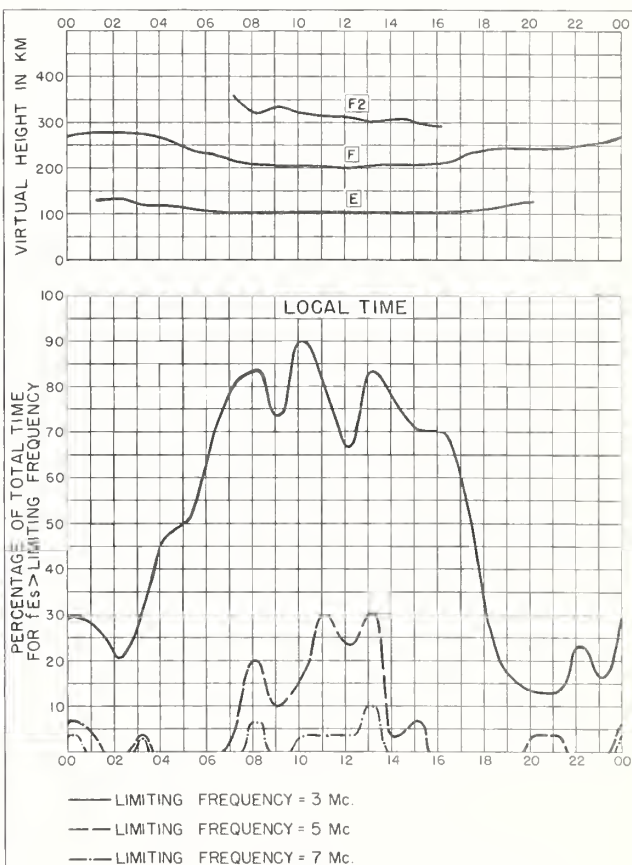


Fig. 20. UPSALA, SWEDEN

APRIL 1961

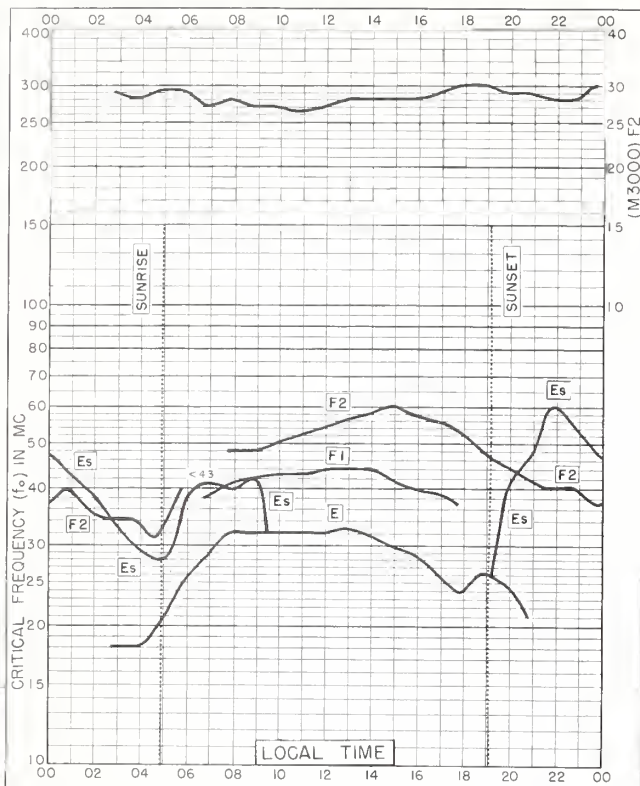


Fig. 21. CHURCHILL, CANADA  
58.8°N, 94.2°W

APRIL 1961

NBS 503

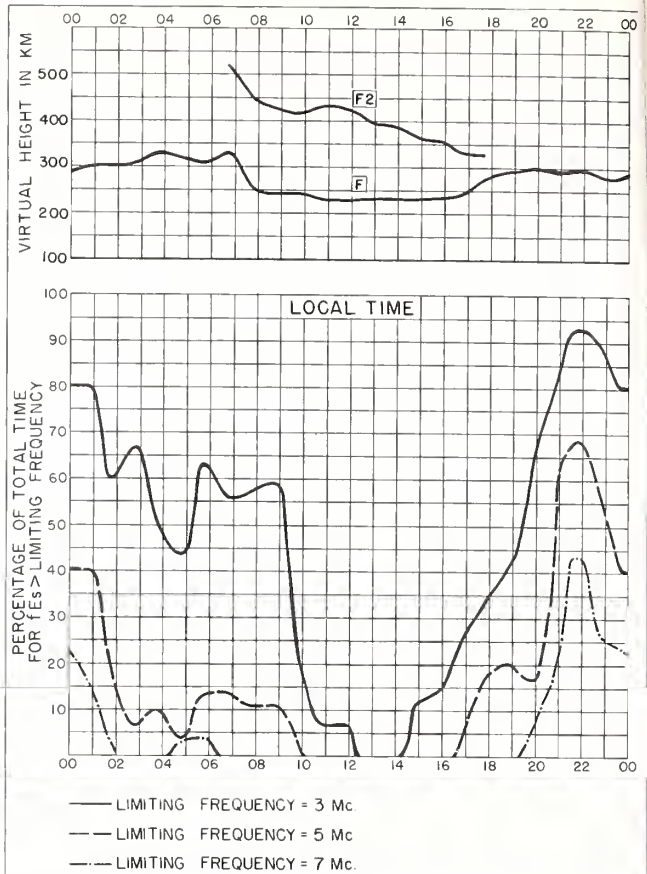


Fig. 22. CHURCHILL, CANADA

APRIL 1961

NBS 490

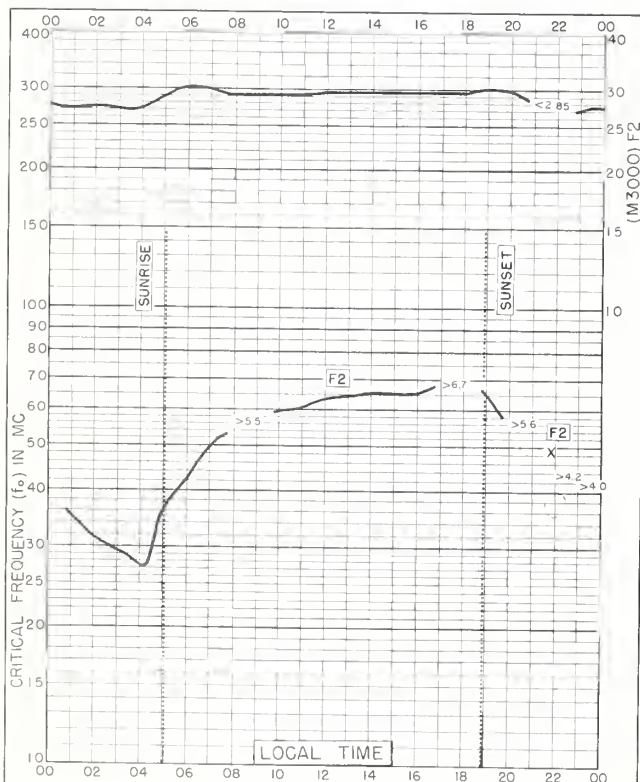


Fig. 23. INVERNESS, SCOTLAND  
57.4°N, 4.2°W

APRIL 1961

NBS 503



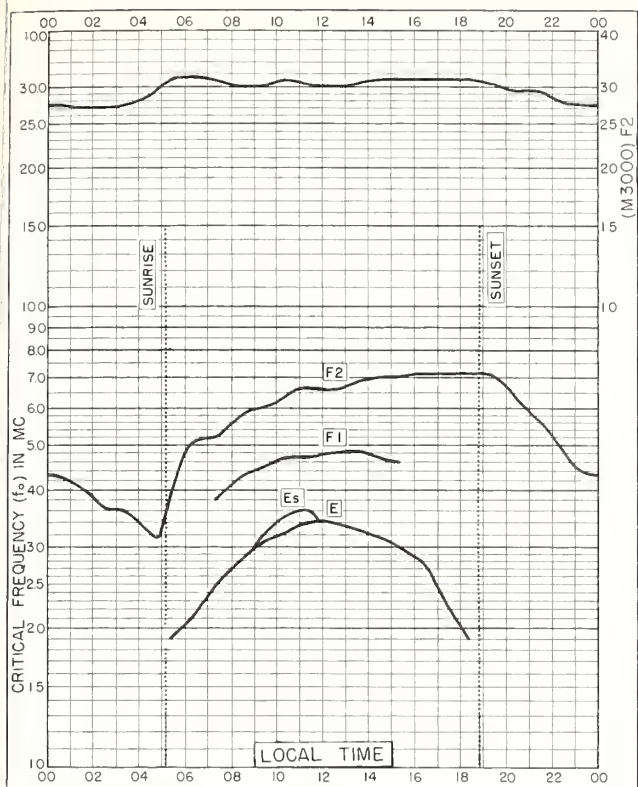


Fig. 24. De BILT , HOLLAND  
52.1°N, 5.2°E

APRIL 1961

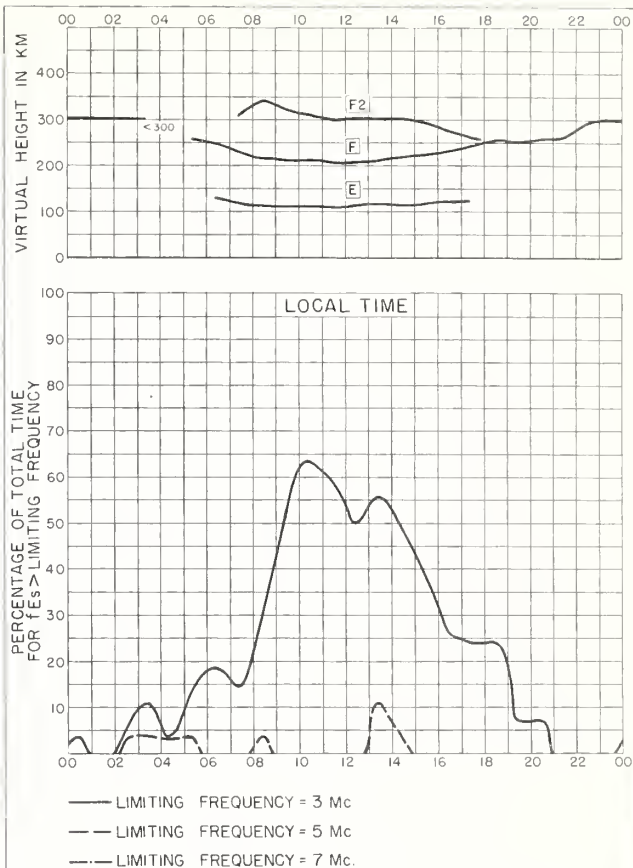


Fig. 25. De BILT , HOLLAND

APRIL 1961

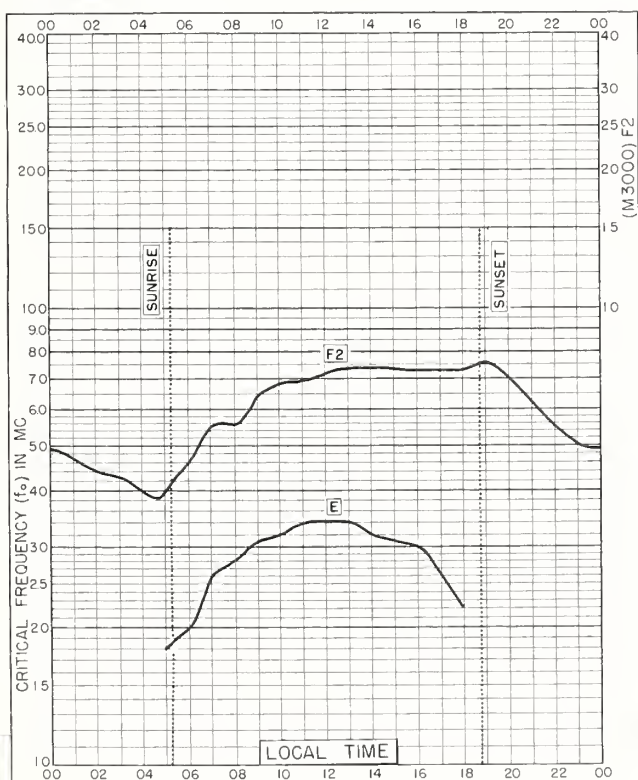


Fig. 26. PRUHONICE , CZECHOSLOVAKIA  
50.0°N, 14.6°E

APRIL 1961

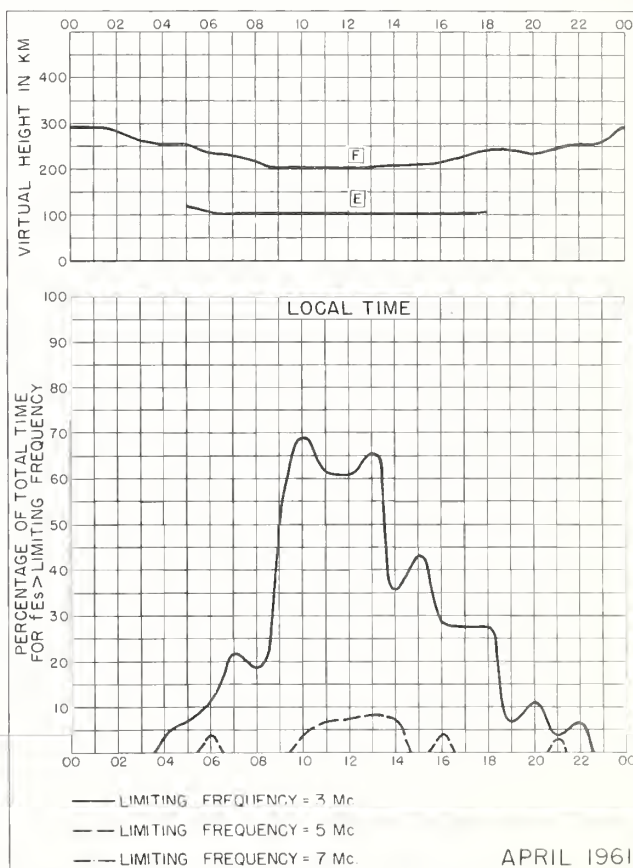
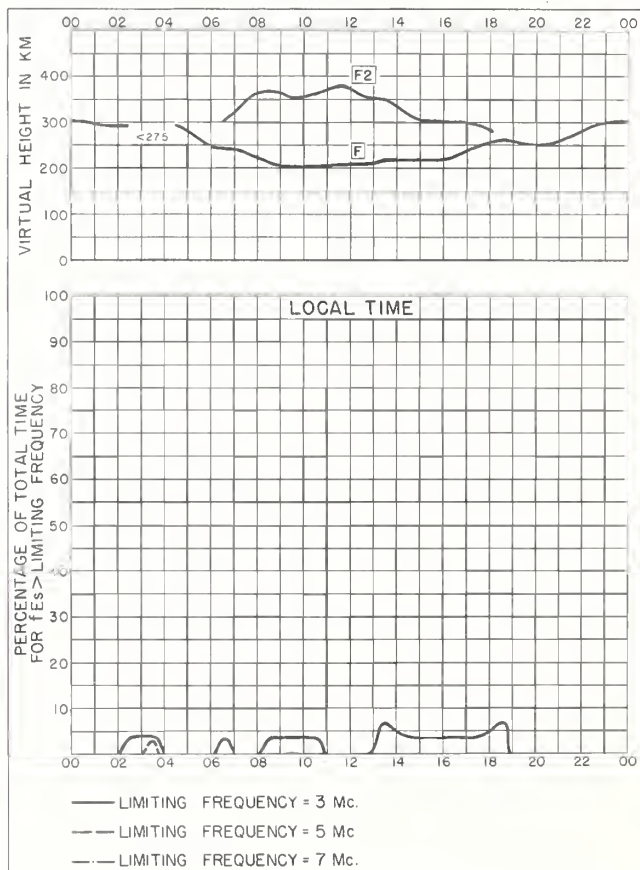
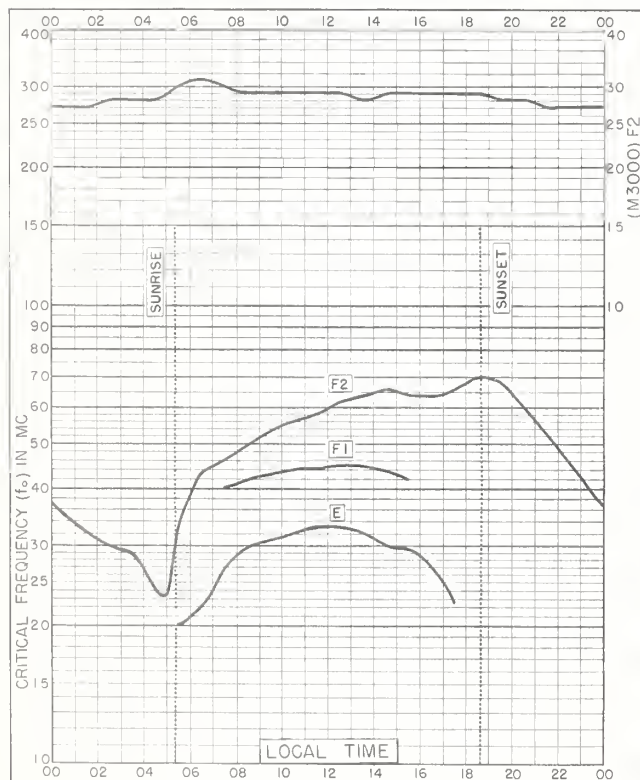
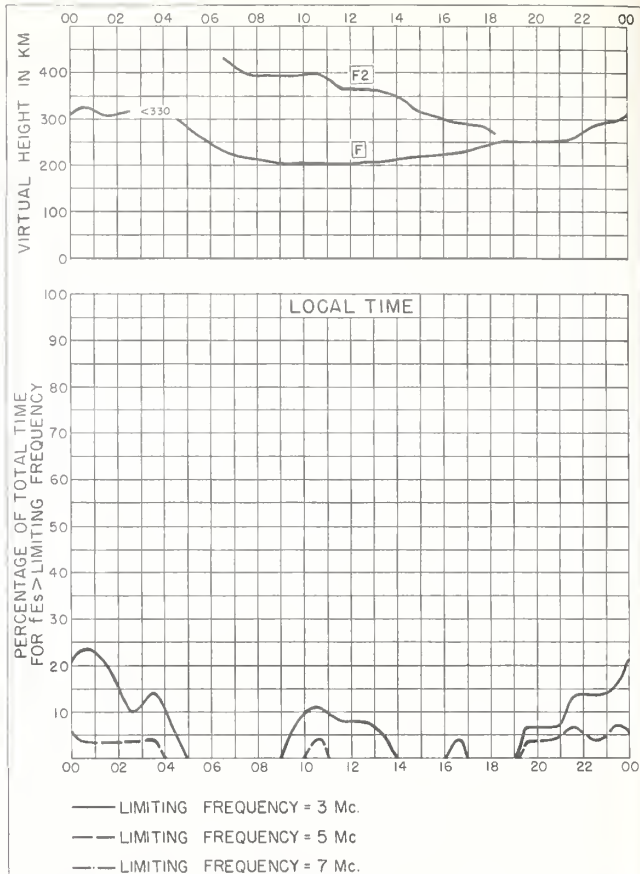
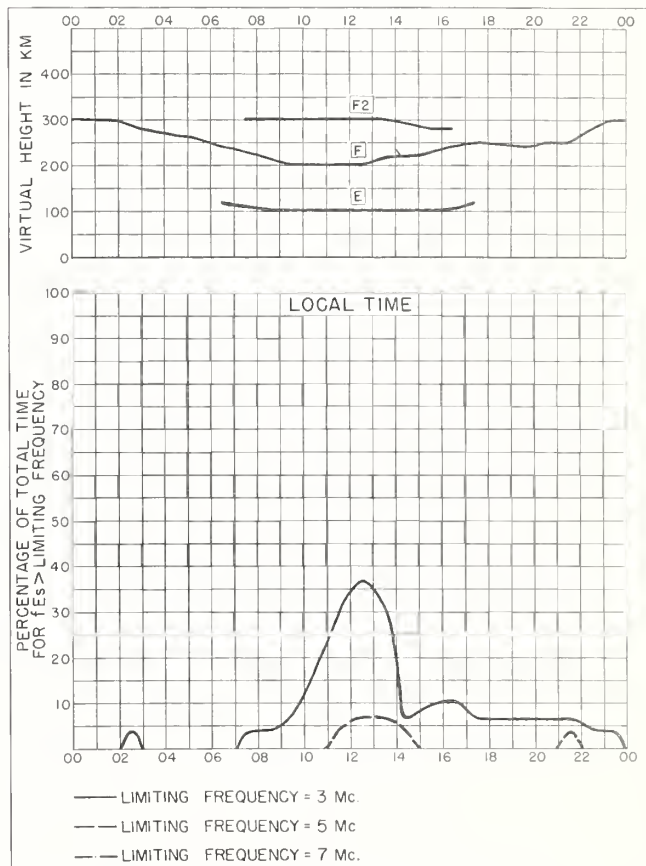
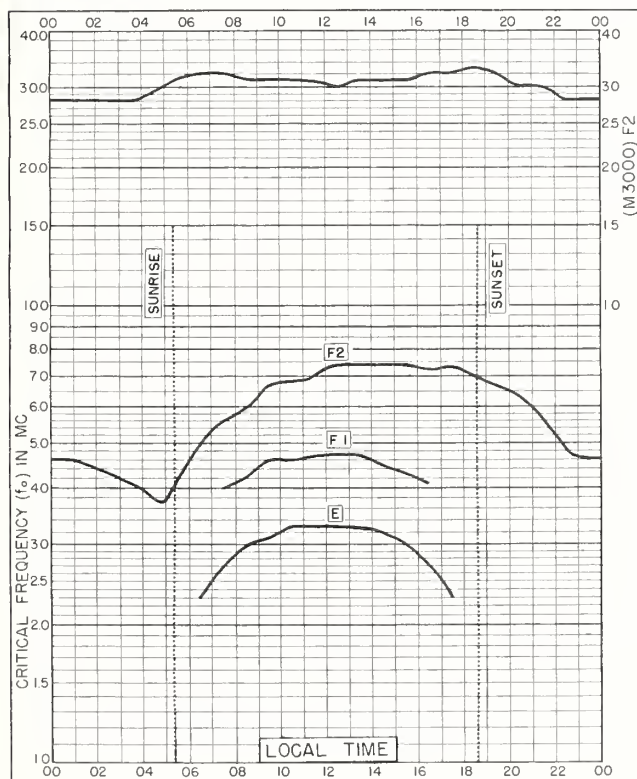
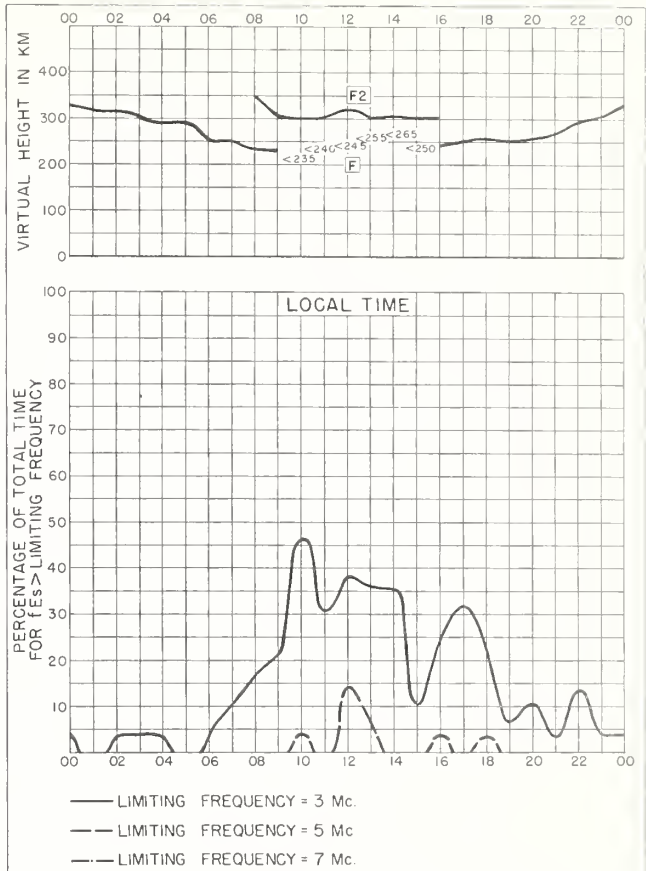
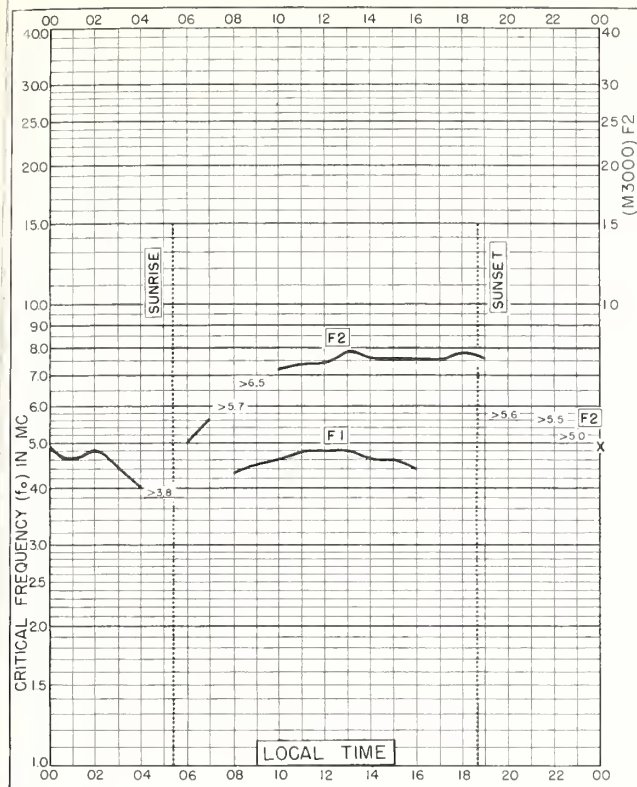


Fig. 27. PRUHONICE , CZECHOSLOVAKIA

APRIL 1961





NBS 503

NBS 490

NBS 503

NBS 490



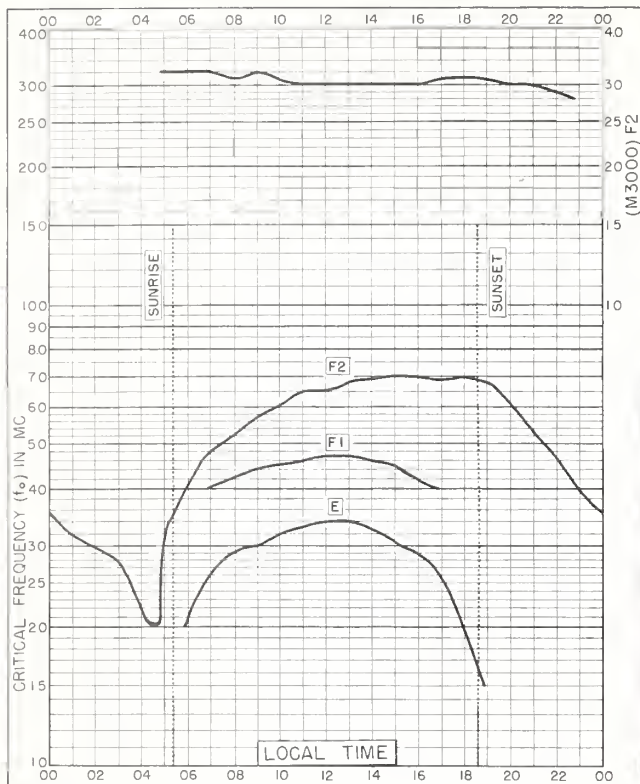


Fig. 36. OTTAWA, CANADA  
45.4°N, 75.9°W

APRIL 1961

NBS 503

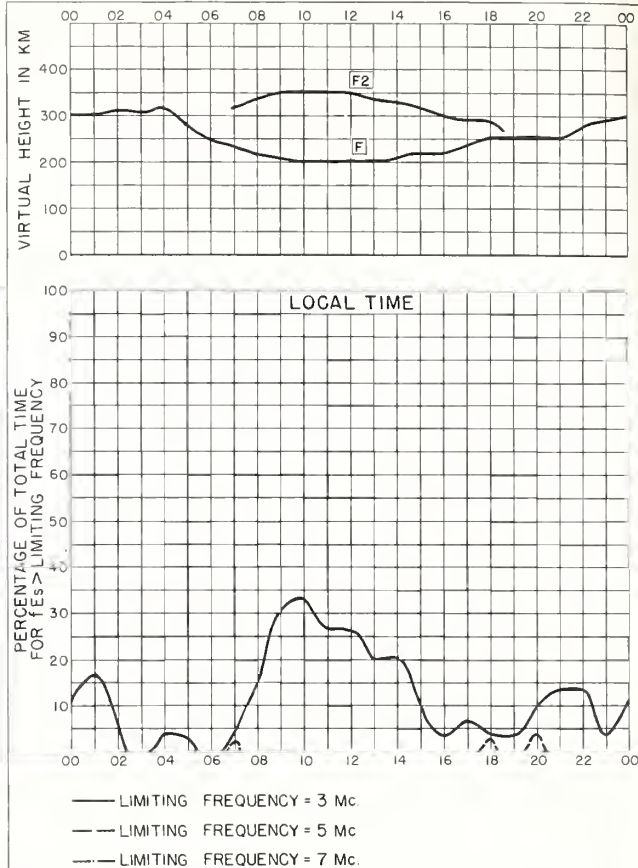


Fig. 37. OTTAWA, CANADA

APRIL 1961

NBS 490

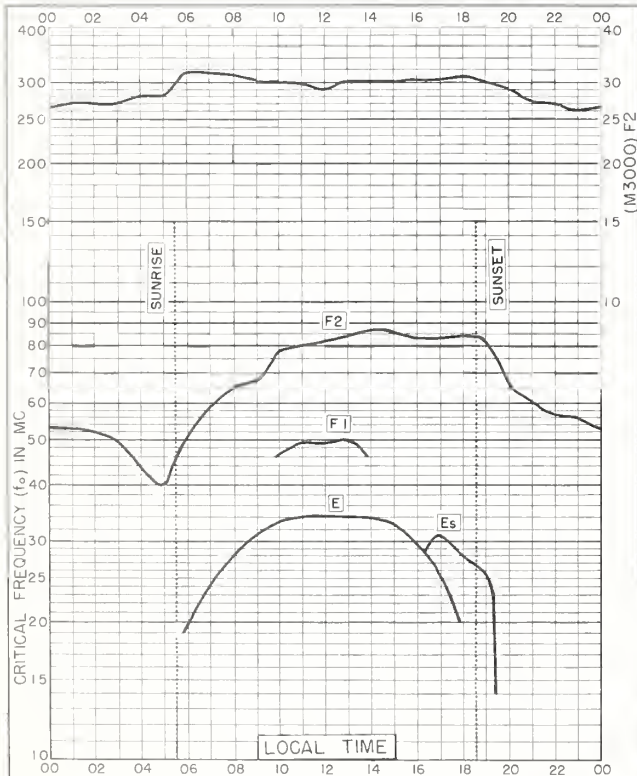


Fig. 38. ROME, ITALY  
41.8°N, 12.5°E

APRIL 1961

NBS 503

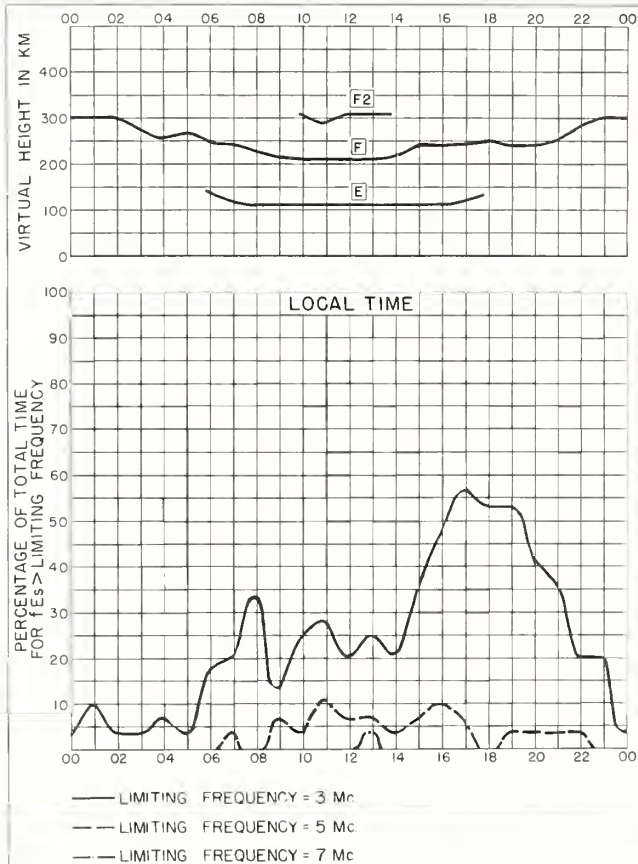


Fig. 39. ROME, ITALY

APRIL 1961

NBS 490



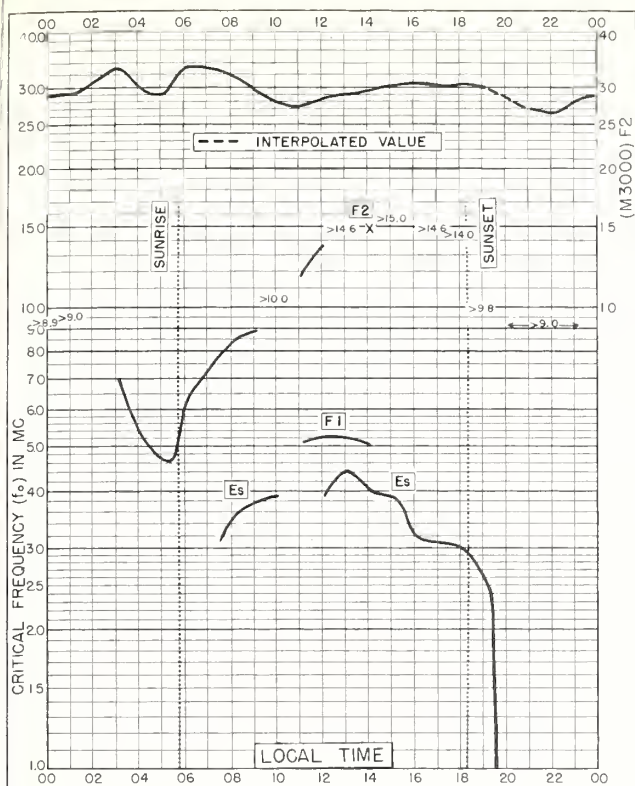


Fig. 40. FORMOSA, CHINA  
25.0°N, 121.5°E

APRIL 1961

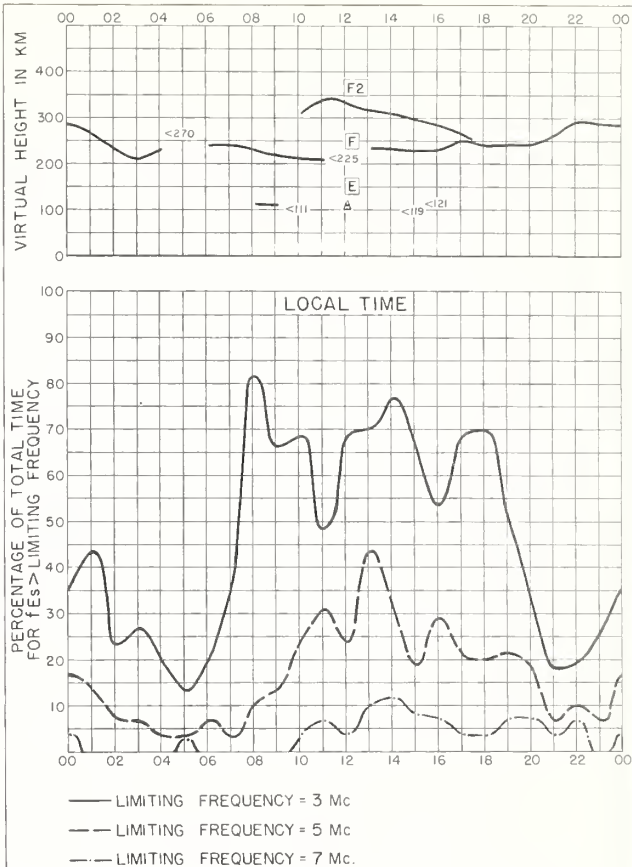


Fig. 41. FORMOSA, CHINA

APRIL 1961

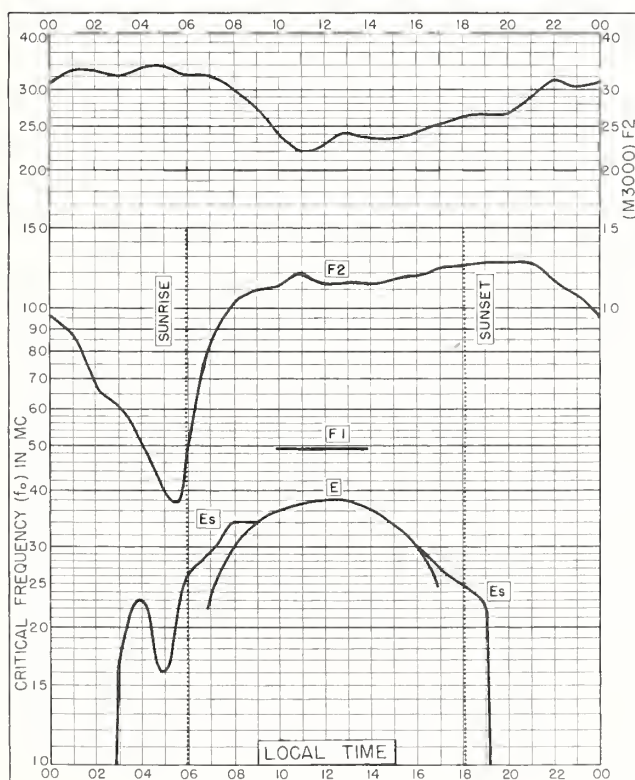


Fig. 42. SINGAPORE, BRITISH MALAYA  
1.3°N, 103.8°E

APRIL 1961

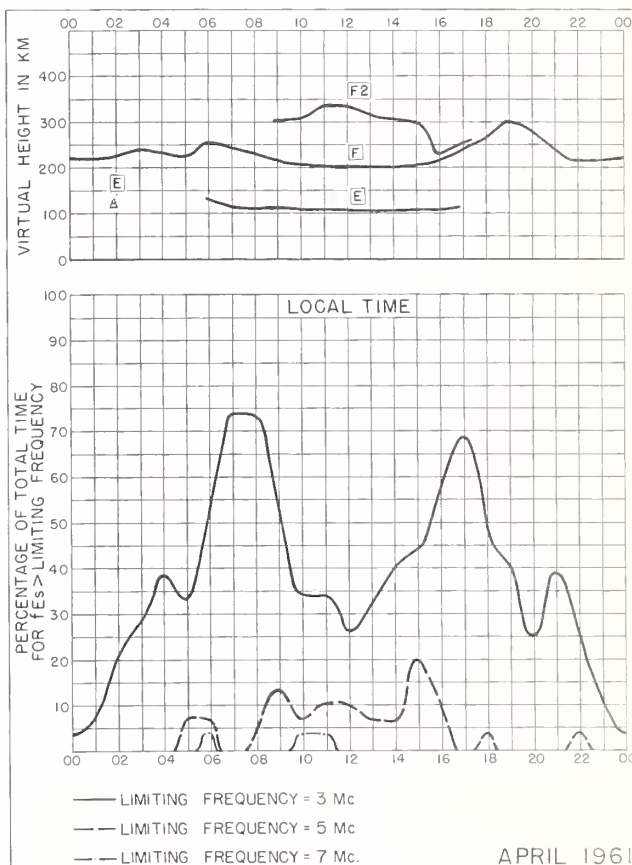


Fig. 43. SINGAPORE, BRITISH MALAYA

APRIL 1961

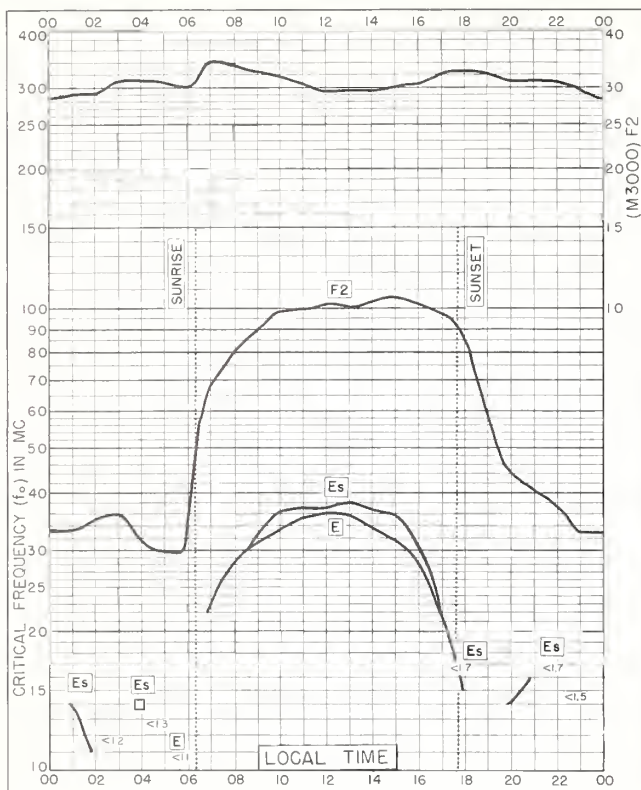


Fig. 44. JOHANNESBURG, UNION OF S. AFRICA  
26.1°S, 28.1°E  
APRIL 1961

NBS 503

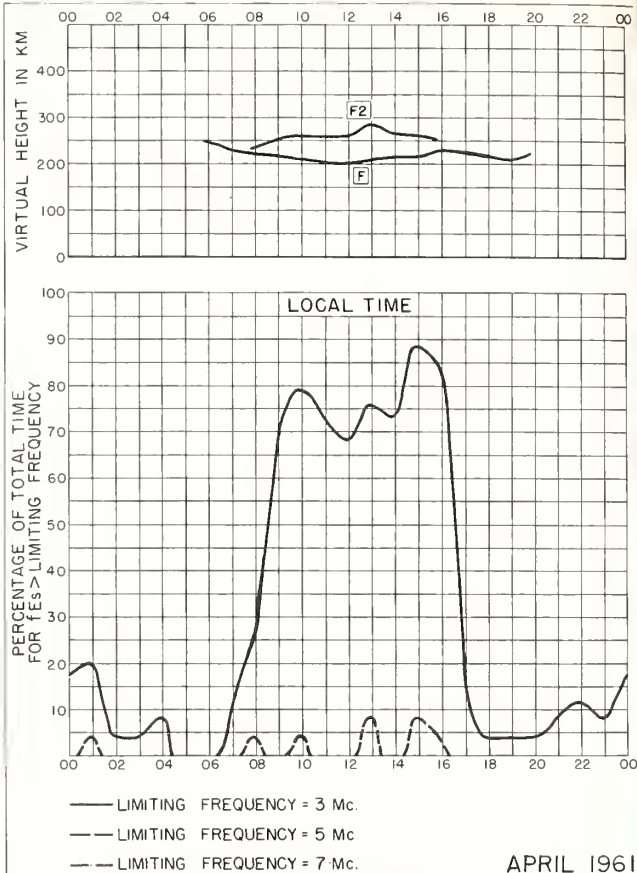


Fig. 45. JOHANNESBURG, UNION OF S. AFRICA

APRIL 1961

NBS 490

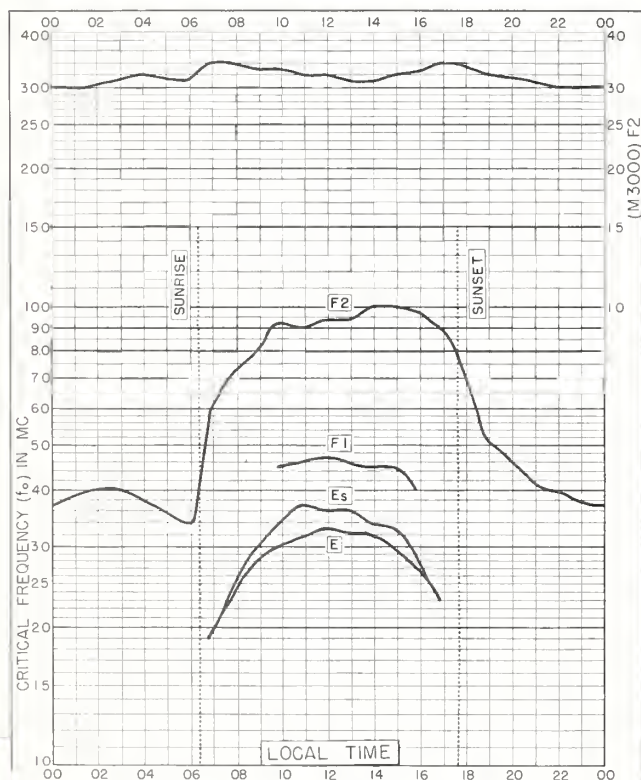


Fig. 46. MUNDARING, W. AUSTRALIA  
32.0°S, 116.2°E  
APRIL 1961

NBS 503

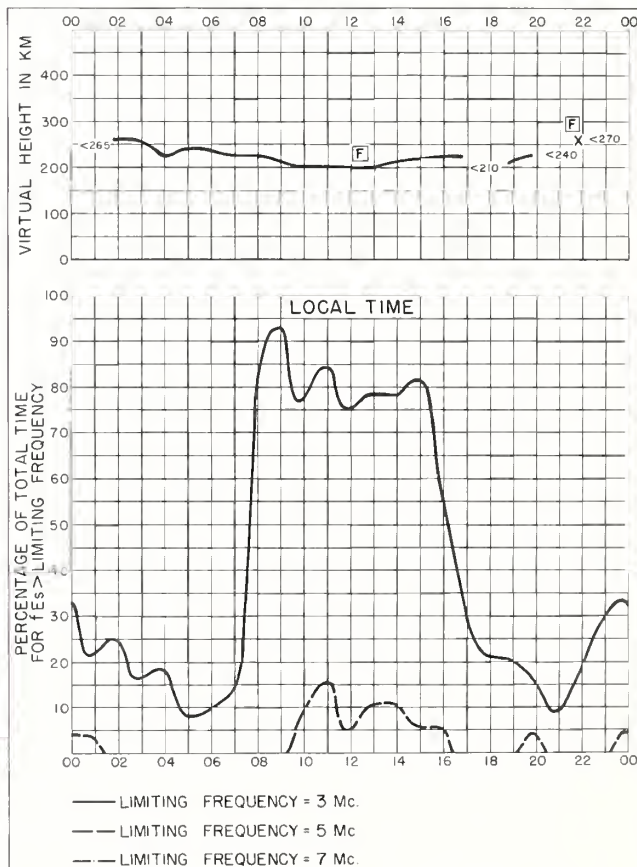


Fig. 47. MUNDARING, W. AUSTRALIA  
APRIL 1961

NBS 490



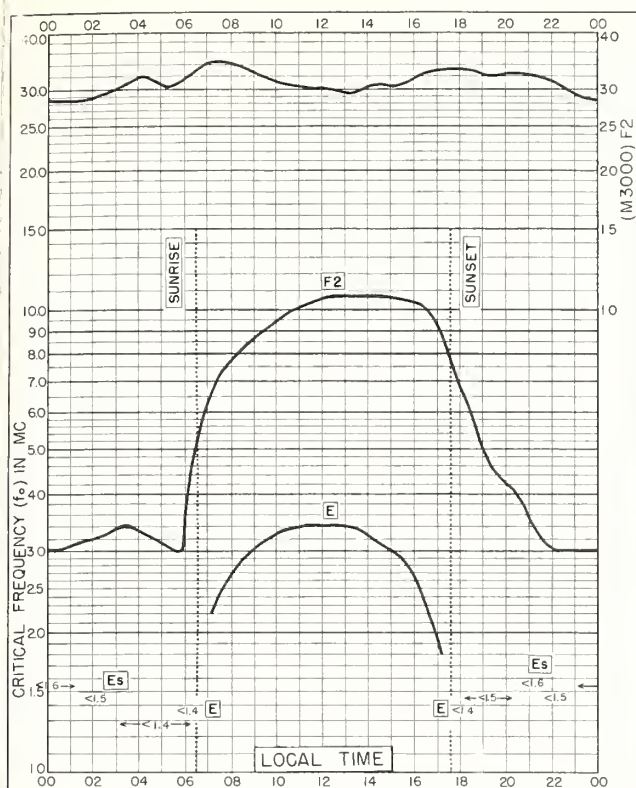


Fig. 48. CAPETOWN, UNION OF S. AFRICA  
34.1°S, 18.3°E  
APRIL 1961

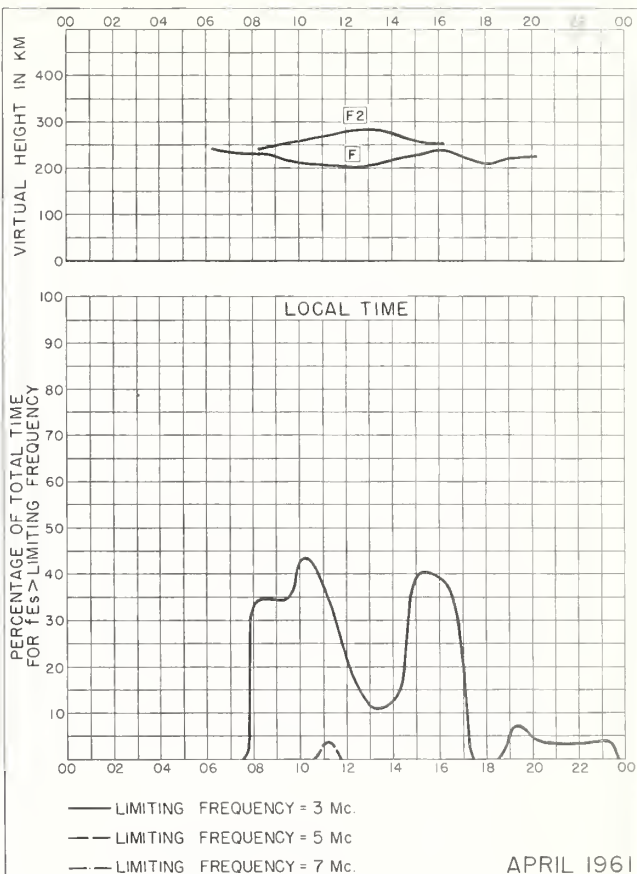


Fig. 49. CAPETOWN, UNION OF S. AFRICA

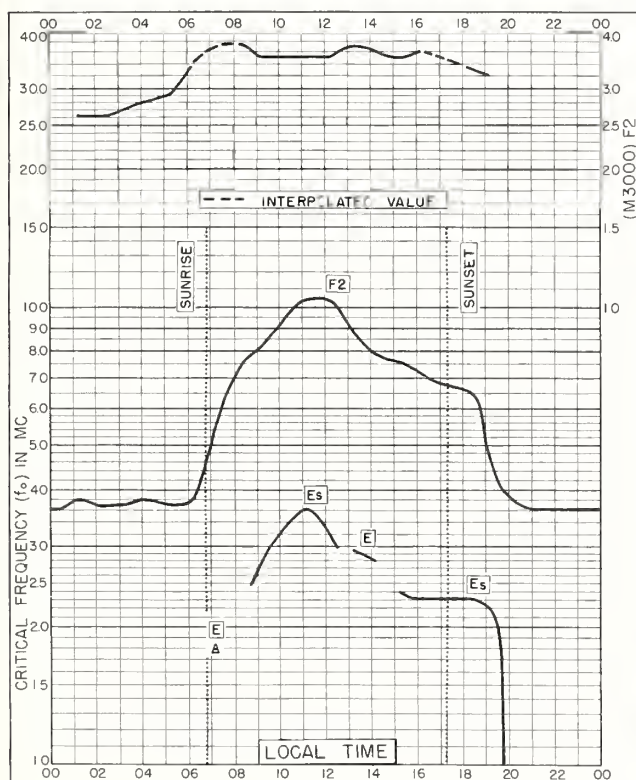


Fig. 50. FALKLAND IS.  
51.7°S, 57.8°W  
APRIL 1961

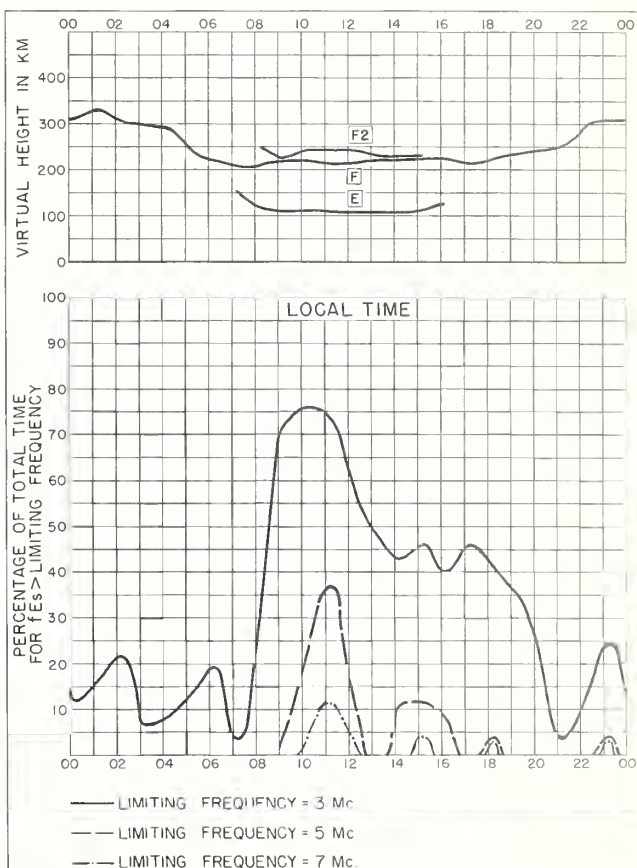


Fig. 51. FALKLAND IS.

APRIL 1961

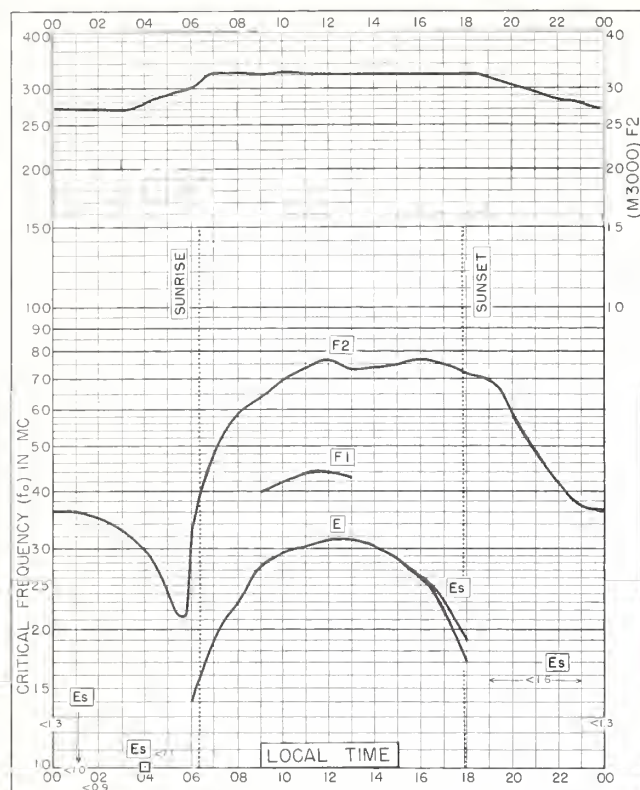


Fig. 52. SLOUGH, ENGLAND  
51.5°N, 0.6°W

MARCH 1961

NBS 503

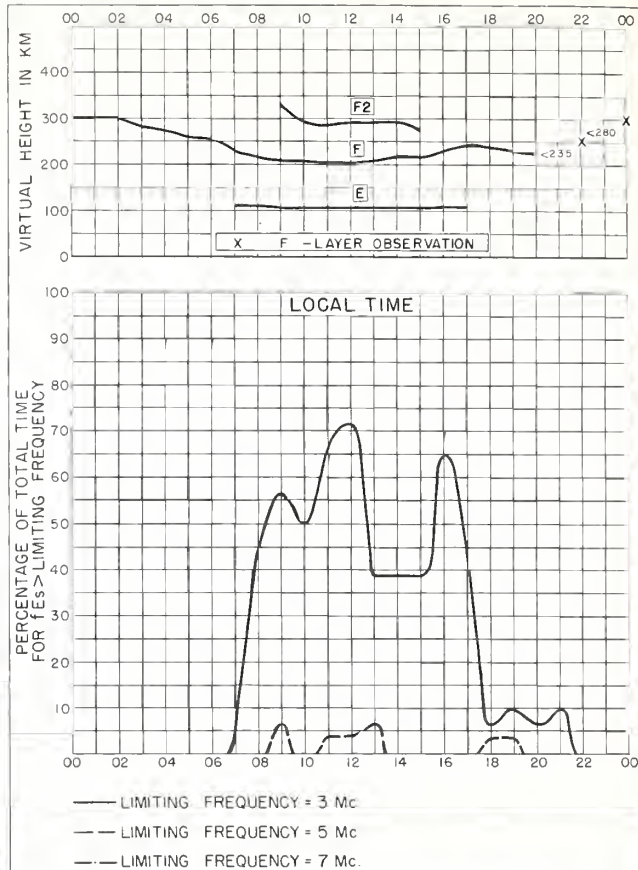


Fig. 53. SLOUGH, ENGLAND

MARCH 1961

NBS 490

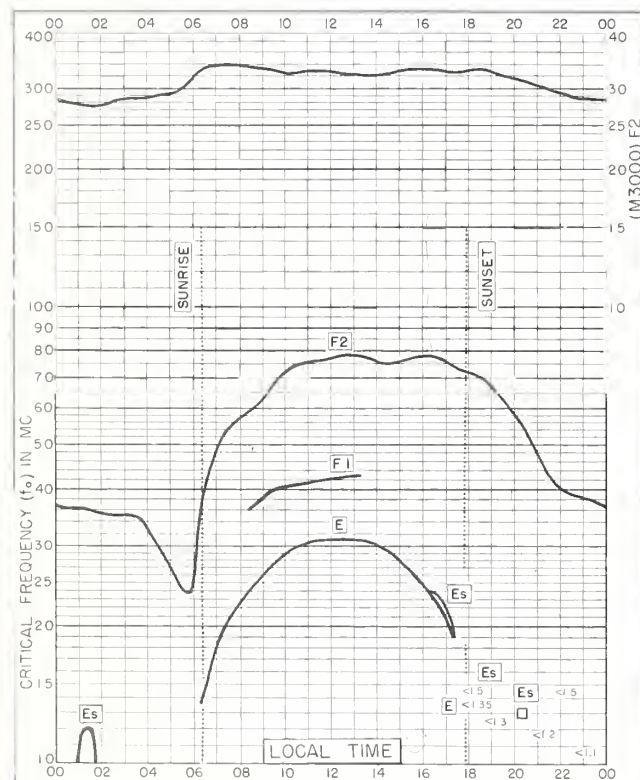


Fig. 54. DOURBES, BELGIUM  
50.1°N, 4.6°E

MARCH 1961

NBS 503

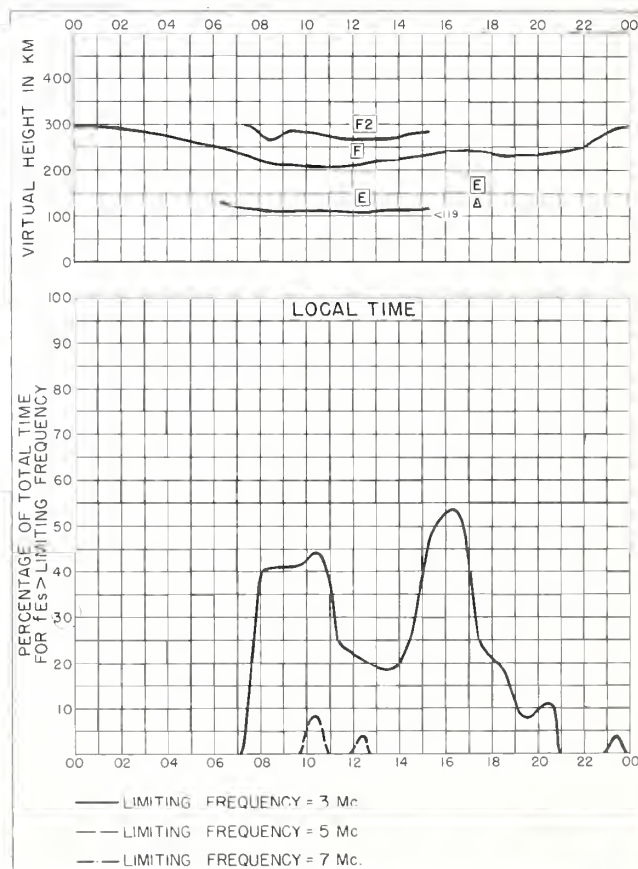


Fig. 55. DOURBES, BELGIUM

MARCH 1961

NBS 490



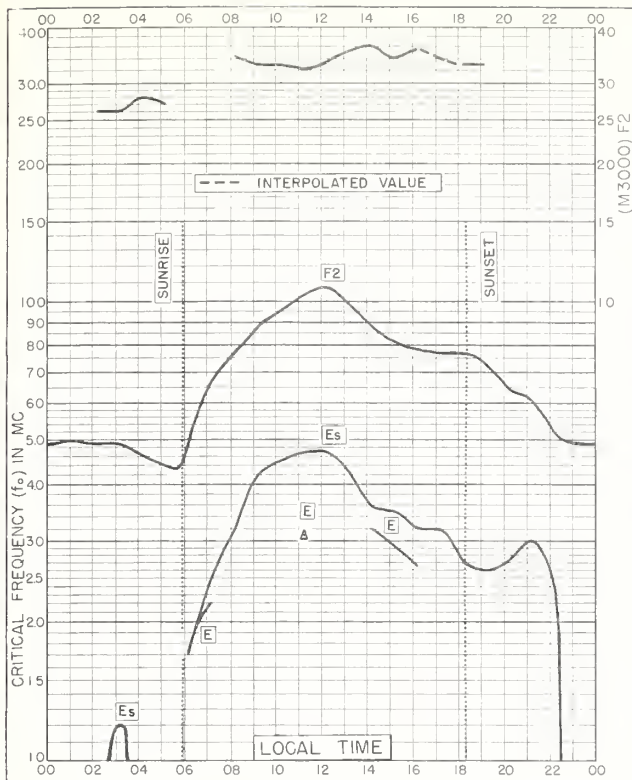


Fig. 56. FALKLAND IS.  
51.7°S, 57.8°W

MARCH 1961

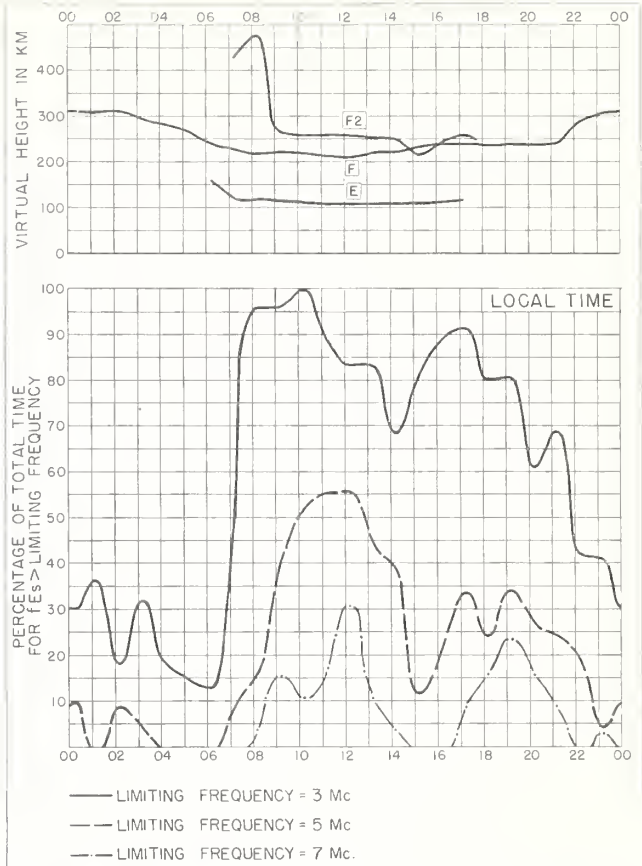


Fig. 57. FALKLAND IS.

MARCH 1961

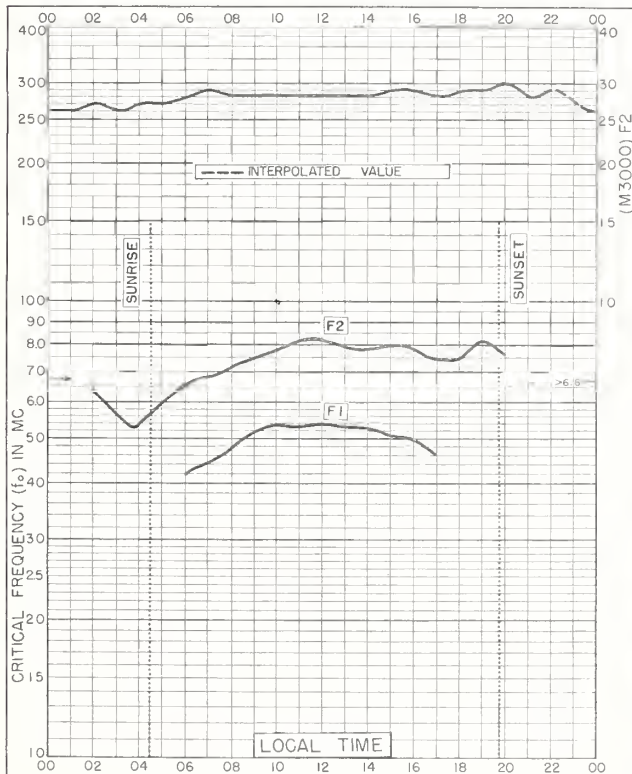


Fig. 58. GRAZ, AUSTRIA  
47.1°N, 15.5°E

JULY 1960

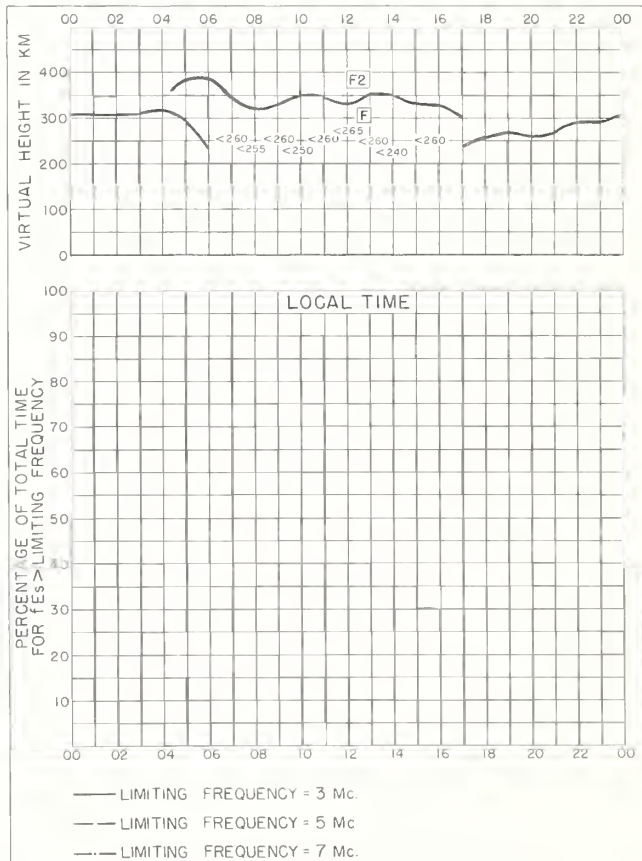


Fig. 59. GRAZ, AUSTRIA

JULY 1960

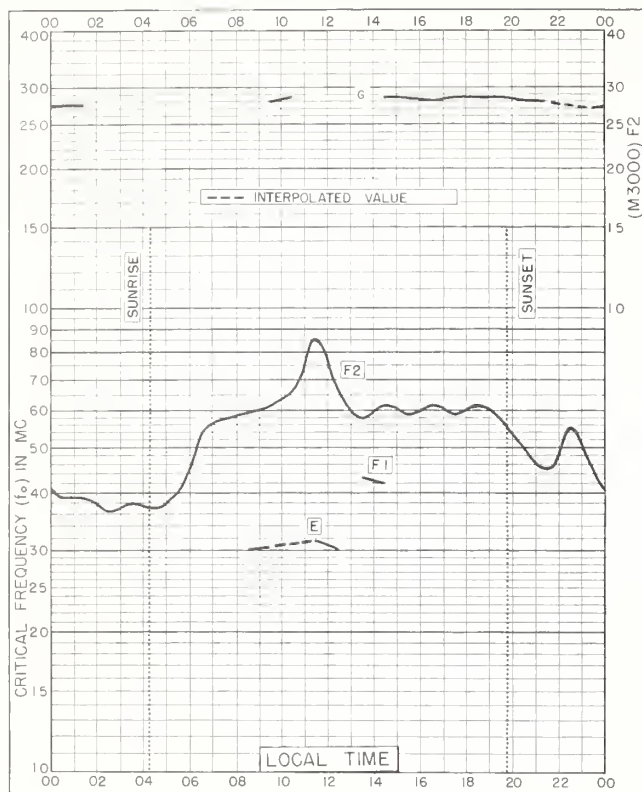


Fig. 60. GODHAVN, GREENLAND  
69.3°N, 53.5°W

APRIL 1960

NBS 503

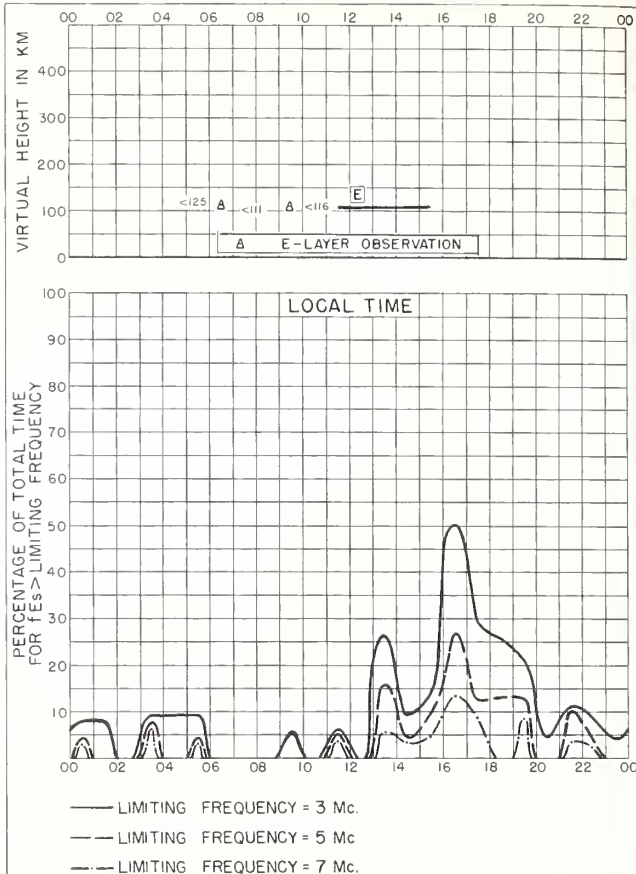


Fig. 61. GODHAVN, GREENLAND

APRIL 1960

NBS 490

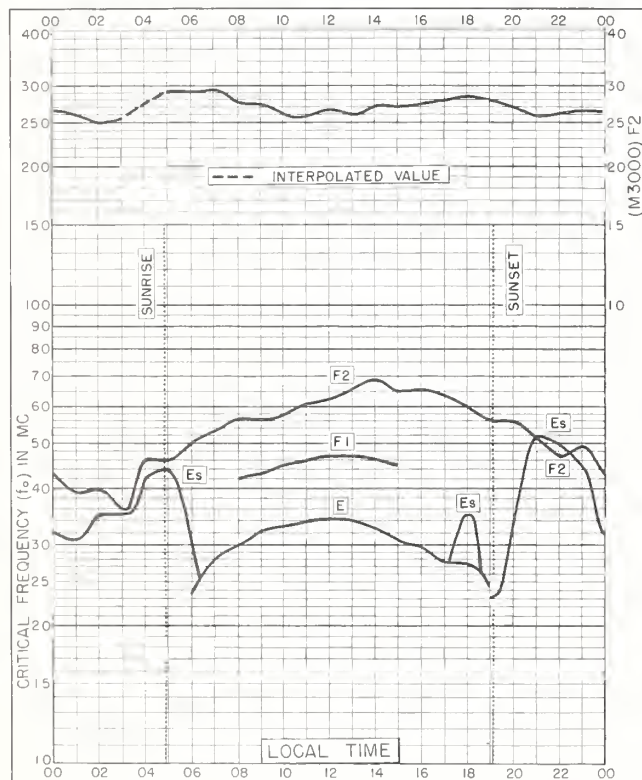


Fig. 62. NARSSARSSUAQ, GREENLAND  
61.2°N, 45.4°W

APRIL 1960

NBS 503

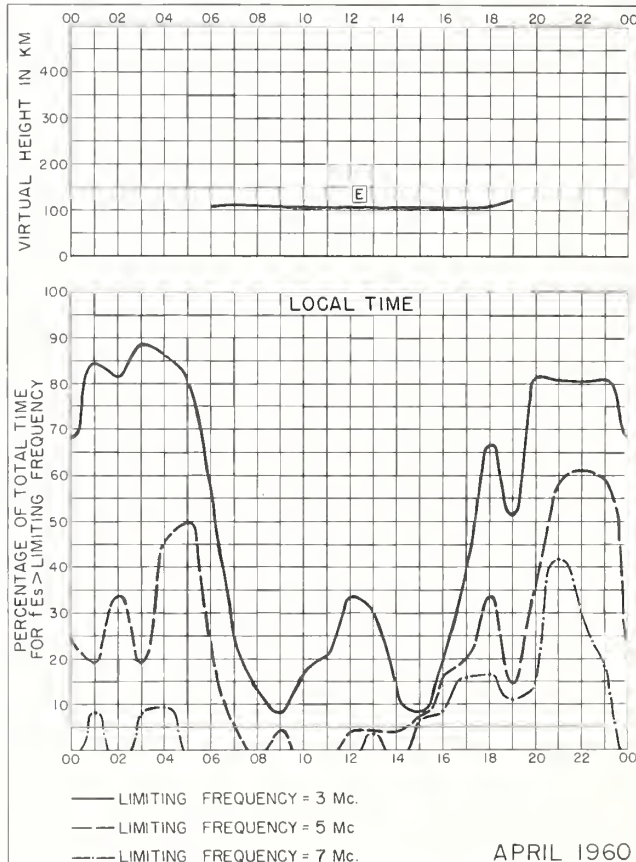


Fig. 63. NARSSARSSUAQ, GREENLAND

APRIL 1960

NBS 490



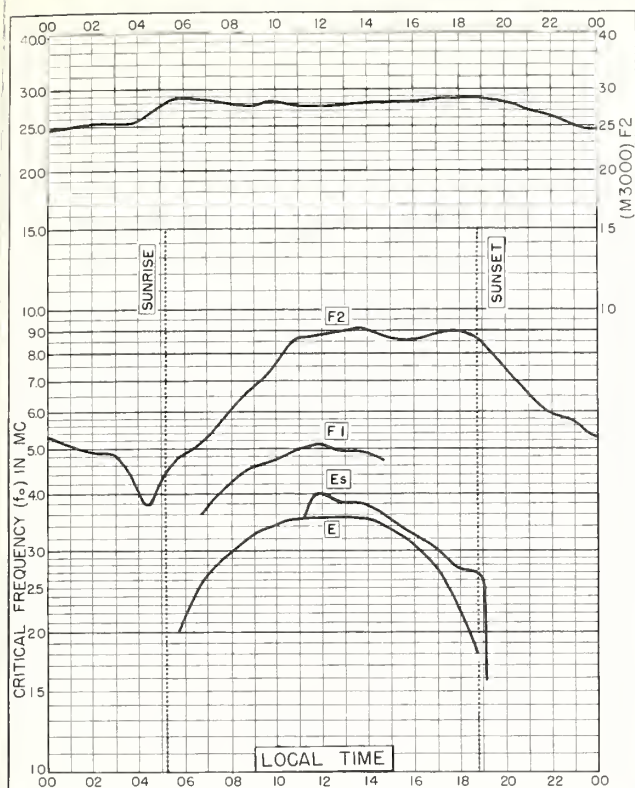


Fig. 64. LINDAU/HARZ, GERMANY  
51.6°N, 10.1°E

APRIL 1960

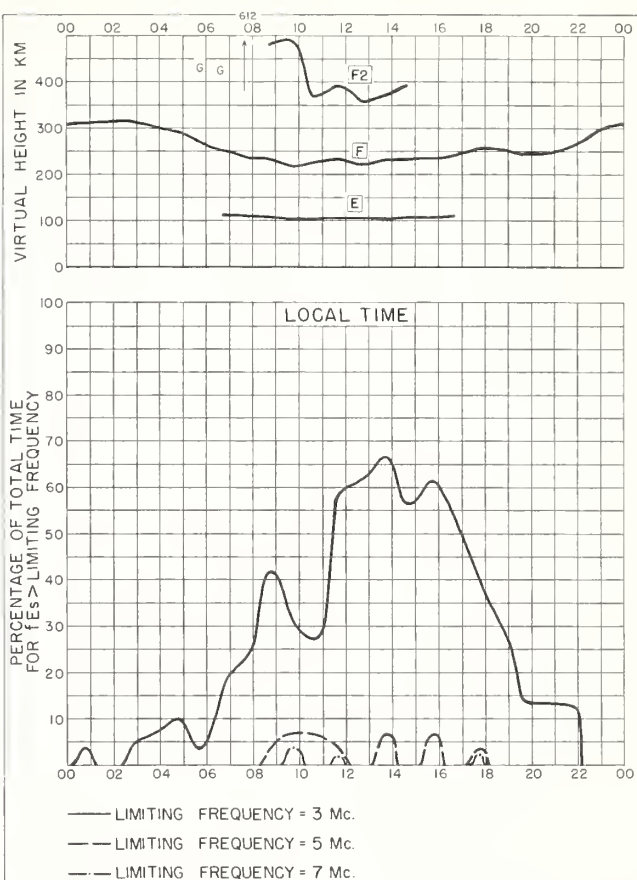


Fig. 65. LINDAU/HARZ, GERMANY

APRIL 1960

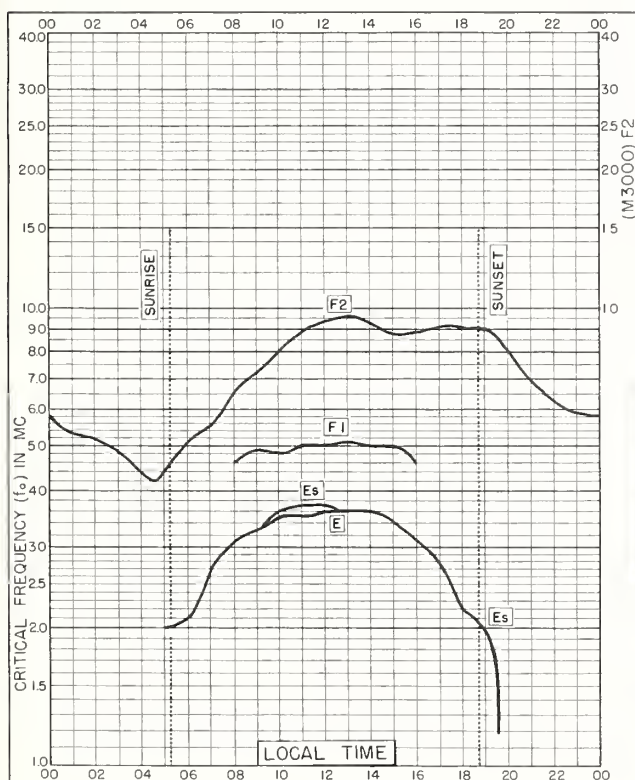


Fig. 66. PRUHONICE, CZECHOSLOVAKIA  
50.0°N, 14.6°E

APRIL 1960

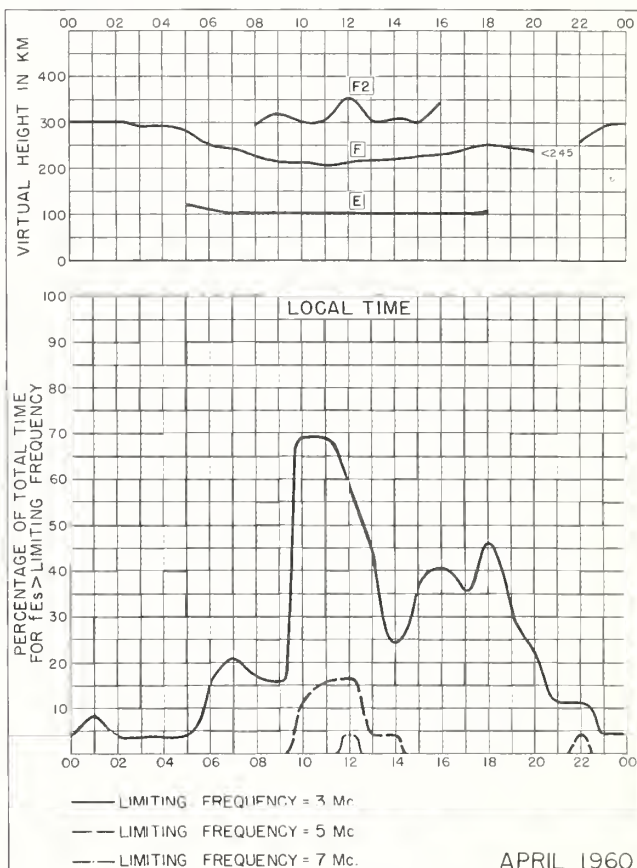


Fig. 67. PRUHONICE, CZECHOSLOVAKIA

APRIL 1960



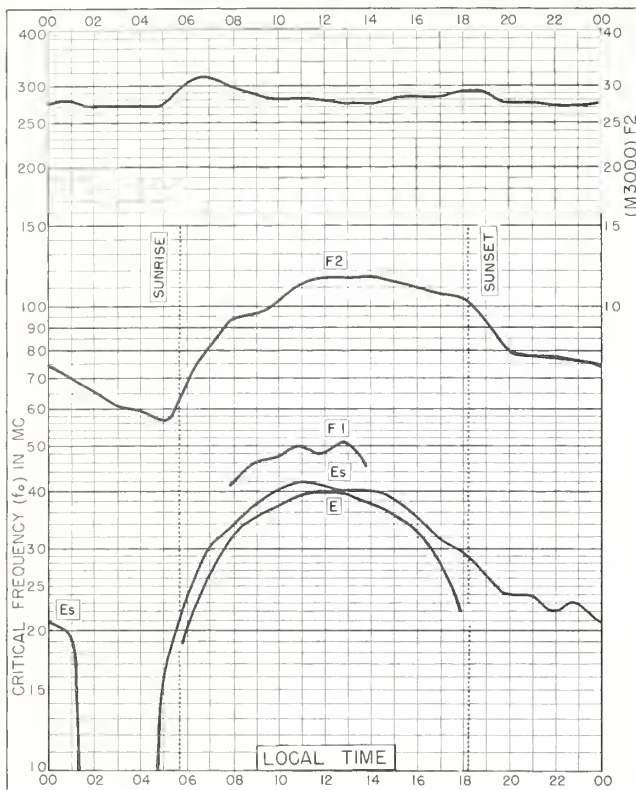


Fig. 68. GRAND BAHAMA I.  
26.6°N, 78.2°W

APRIL 1960

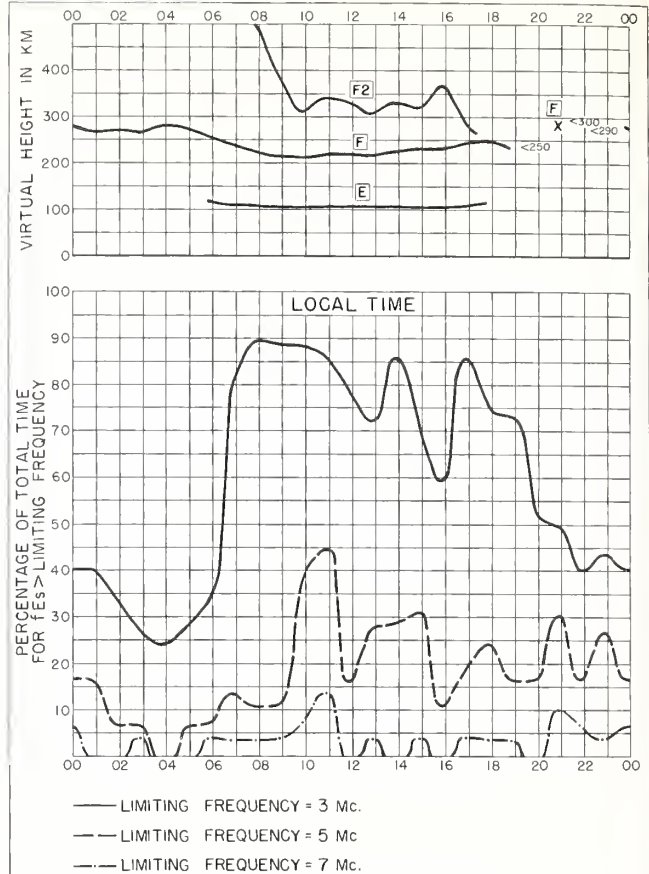


Fig. 69. GRAND BAHAMA I.

APRIL 1960

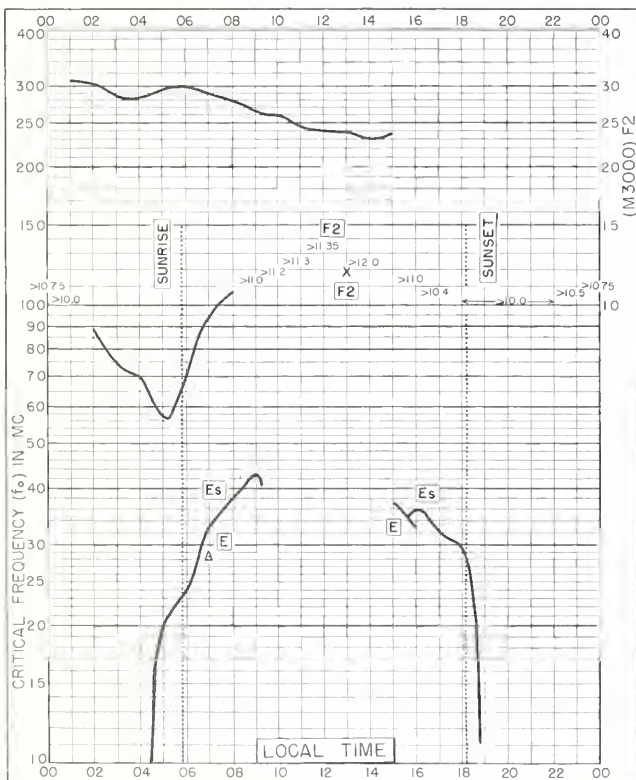


Fig. 70. BAGUIO, P. I.  
16.4°N, 120.6°E

APRIL 1960

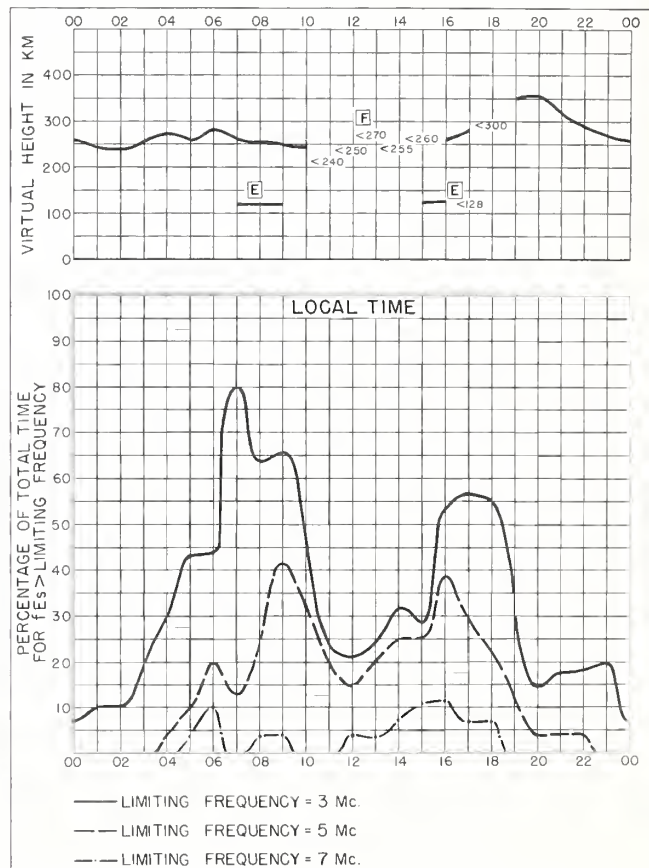


Fig. 71. BAGUIO, P. I.

APRIL 1960

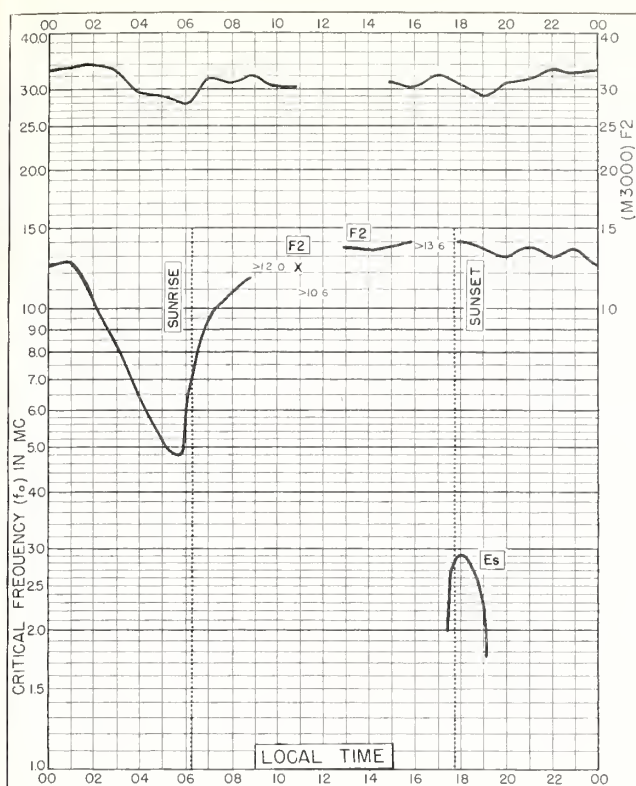


Fig. 72. SAO PAULO, BRAZIL  
23.5°S, 46.5°W

APRIL 1960

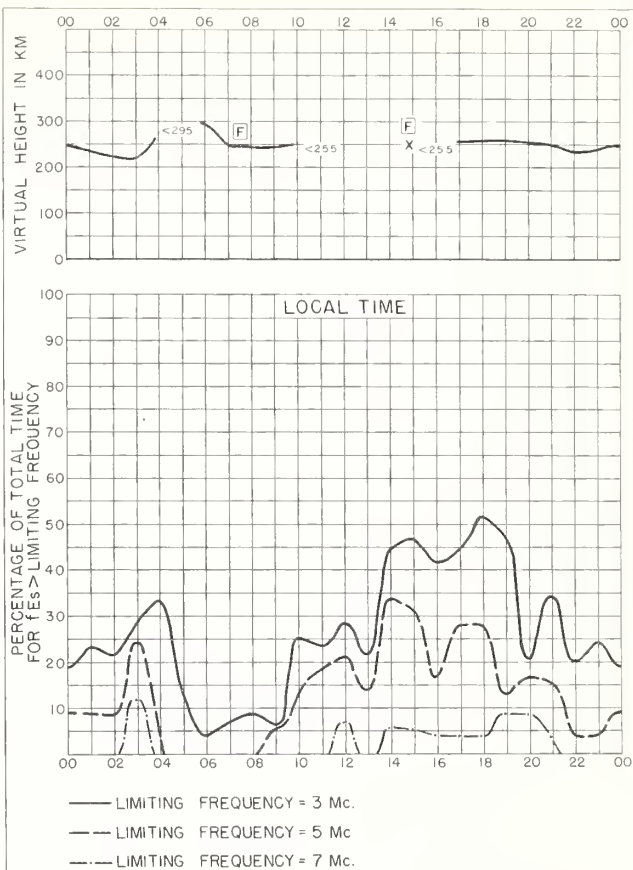


Fig. 73. SAO PAULO, BRAZIL

APRIL 1960

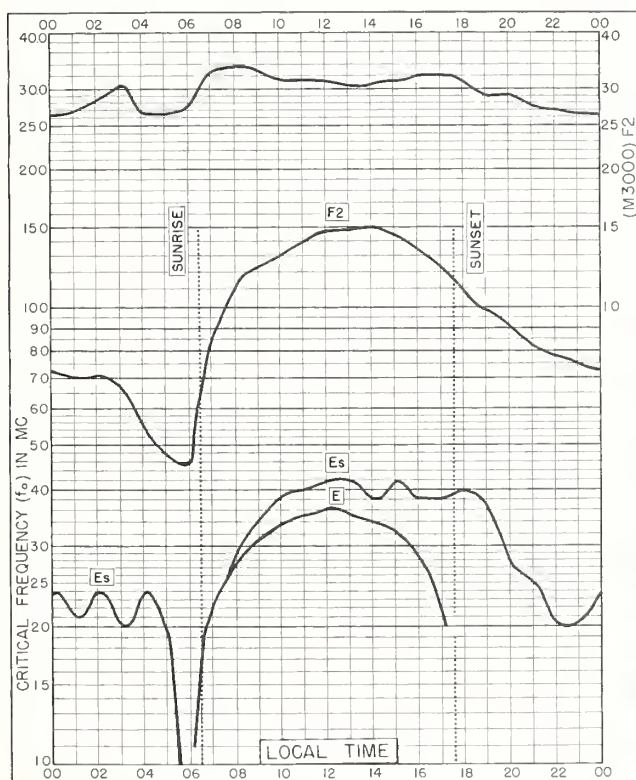


Fig. 74. CONCEPCION, CHILE  
36.6°S, 73.0°W

APRIL 1960

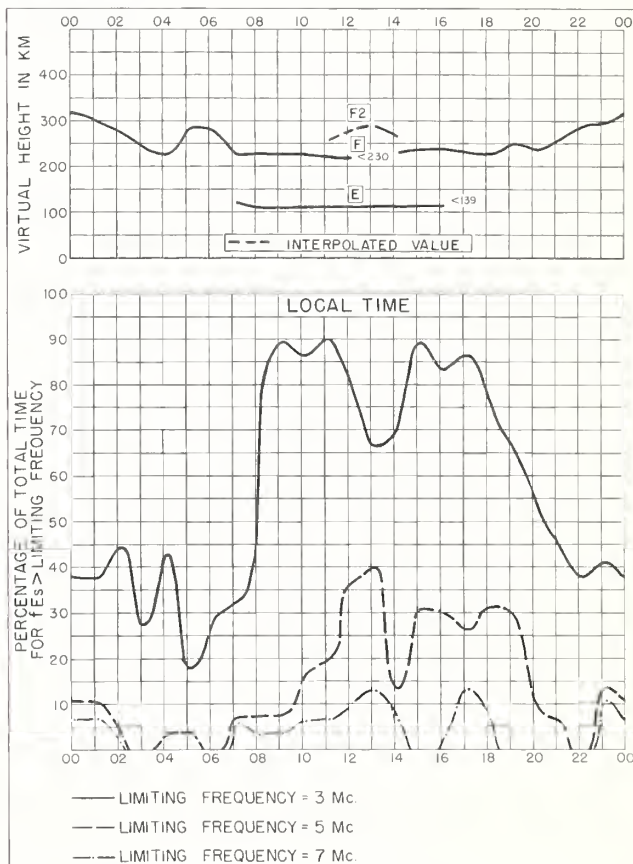


Fig. 75. CONCEPCION, CHILE

APRIL 1960



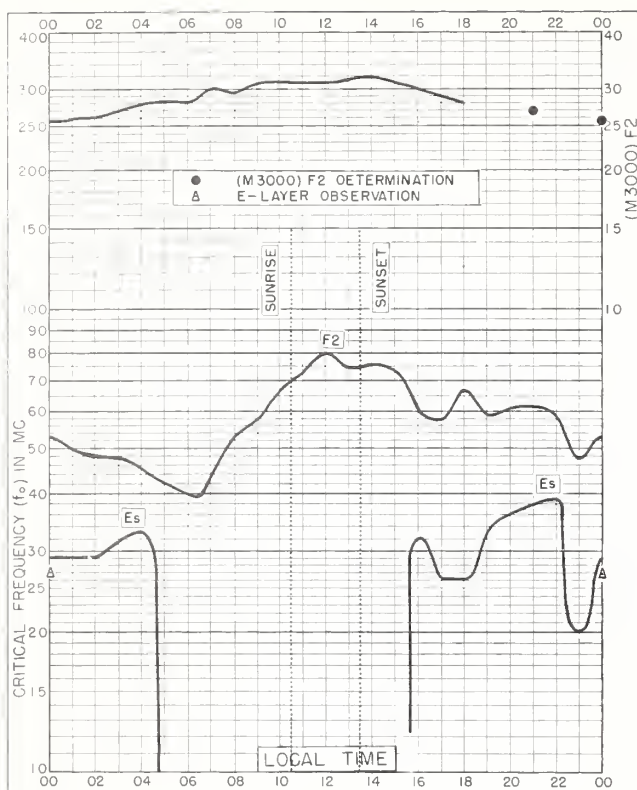


Fig. 76. BYRD STATION  
80.0°S, 120.0°W

APRIL 1960

NBS 503

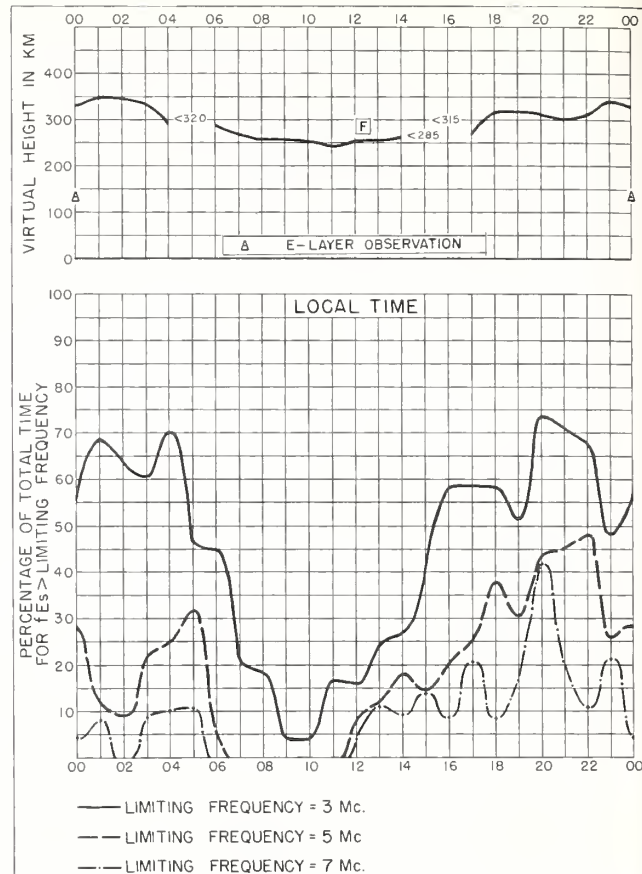


Fig. 77. BYRD STATION

APRIL 1960

NBS 490

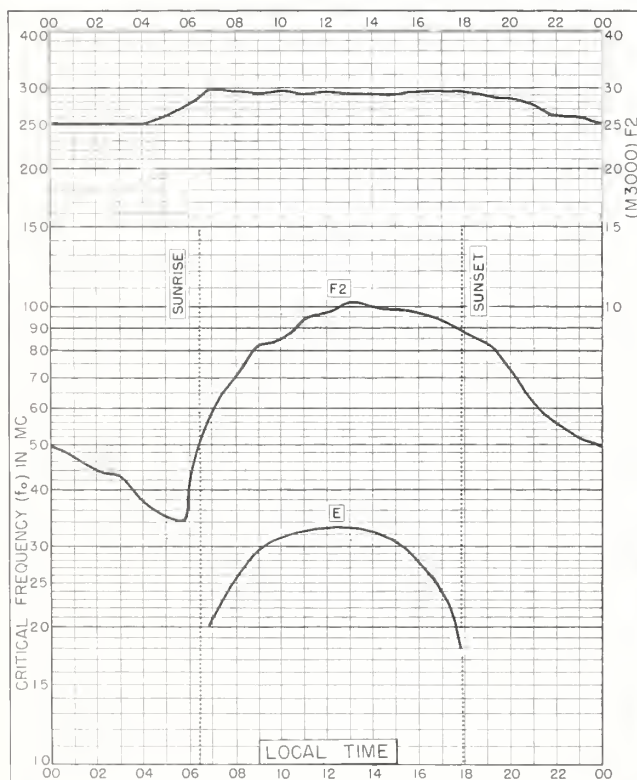


Fig. 78. JULIUSRUH/RÜGEN, GERMANY  
54.6°N, 13.4°E

MARCH 1960

NBS 503

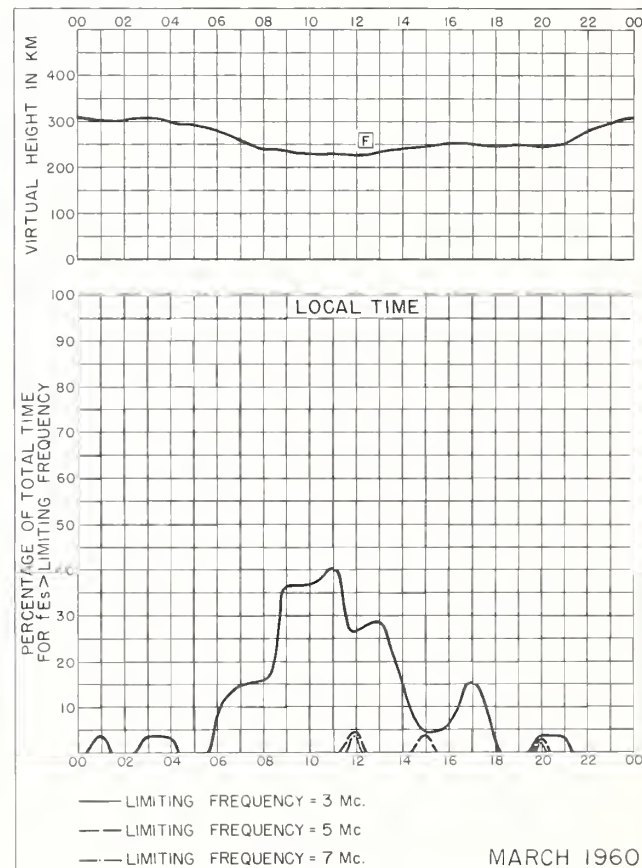


Fig. 79. JULIUSRUH/RÜGEN, GERMANY

MARCH 1960

NBS 490

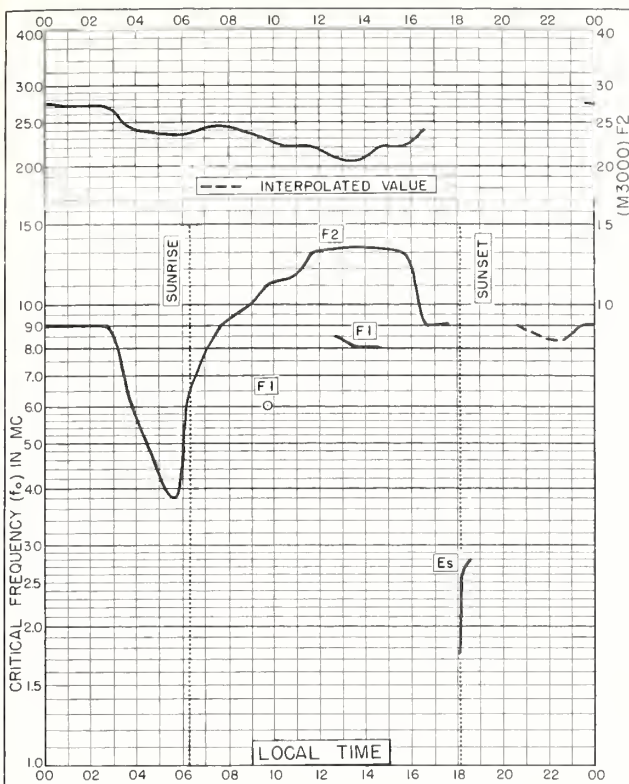


Fig. 80. MACAU  
22.2°N, 113.6°E

MARCH 1960

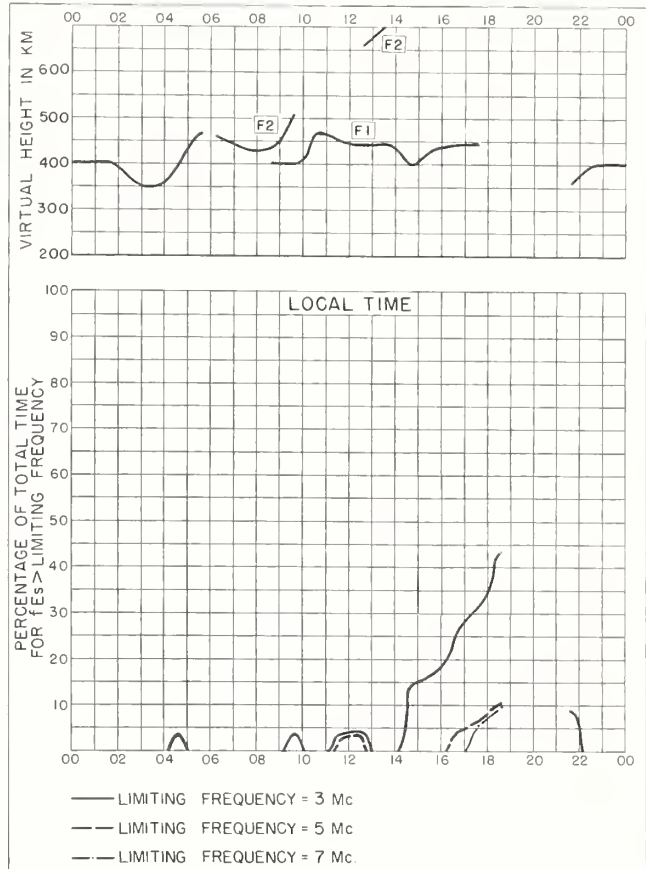


Fig. 81. MACAU

MARCH 1960

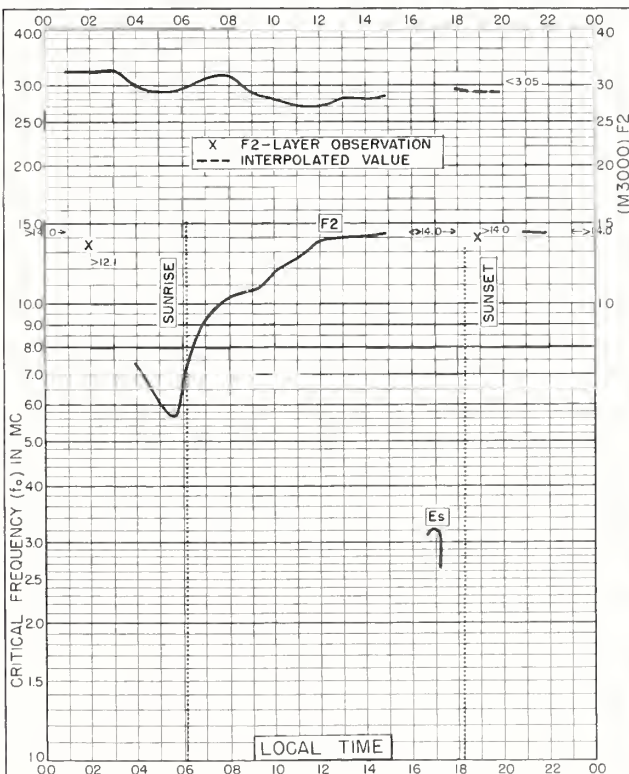


Fig. 82. SAO PAULO, BRAZIL  
23.5°S, 46.5°W

MARCH 1960

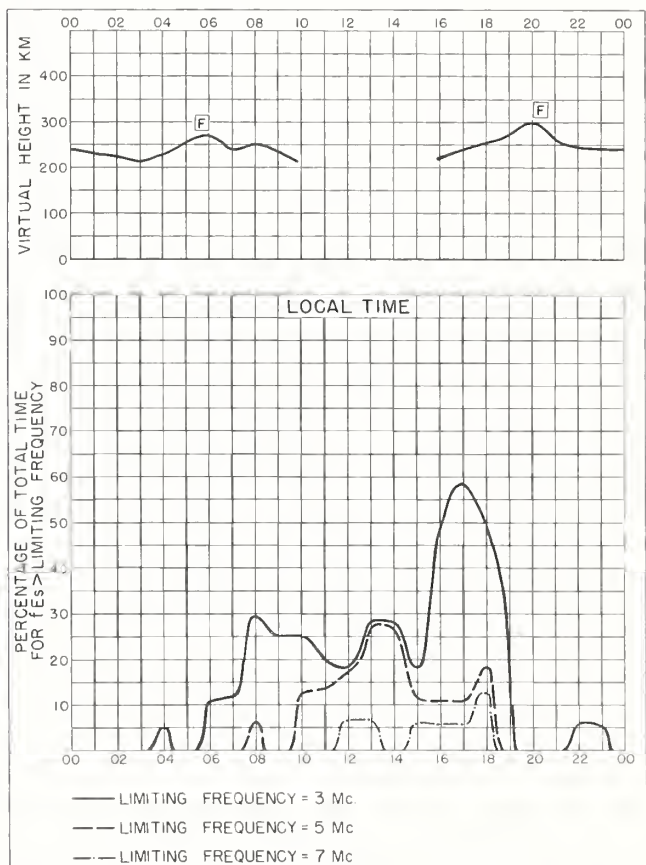
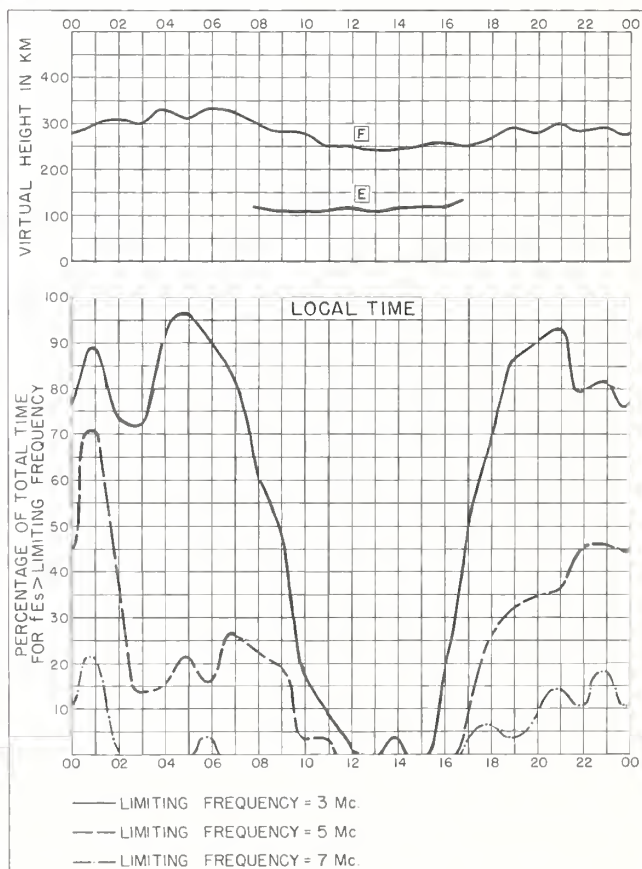
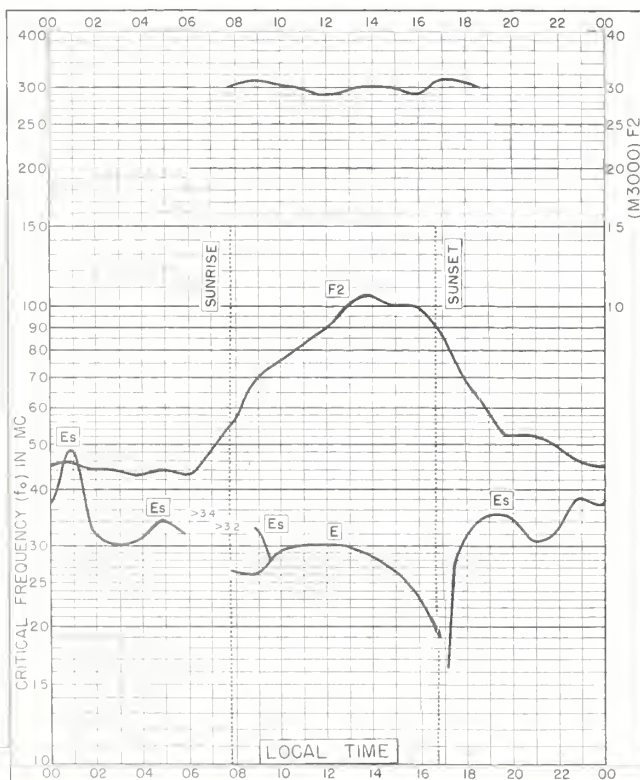
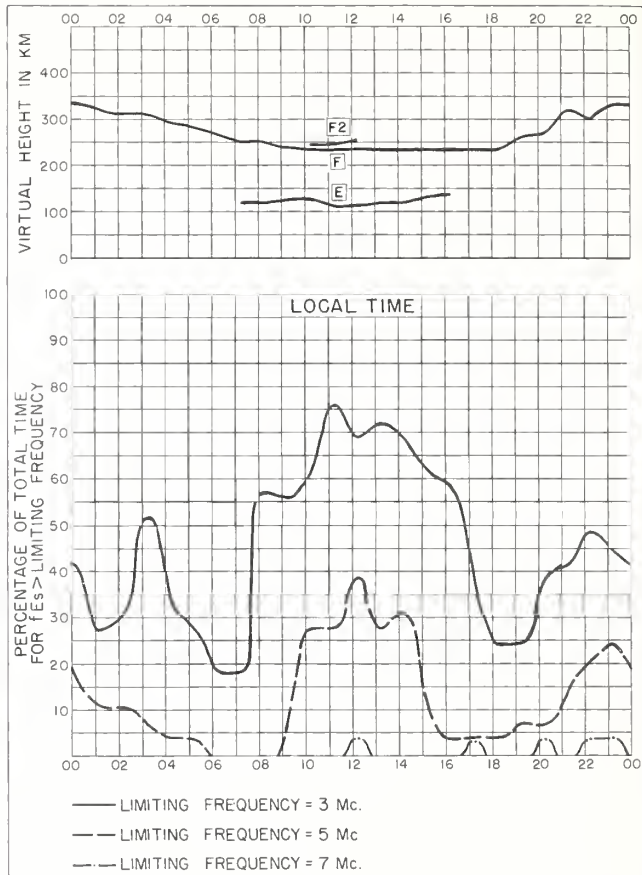
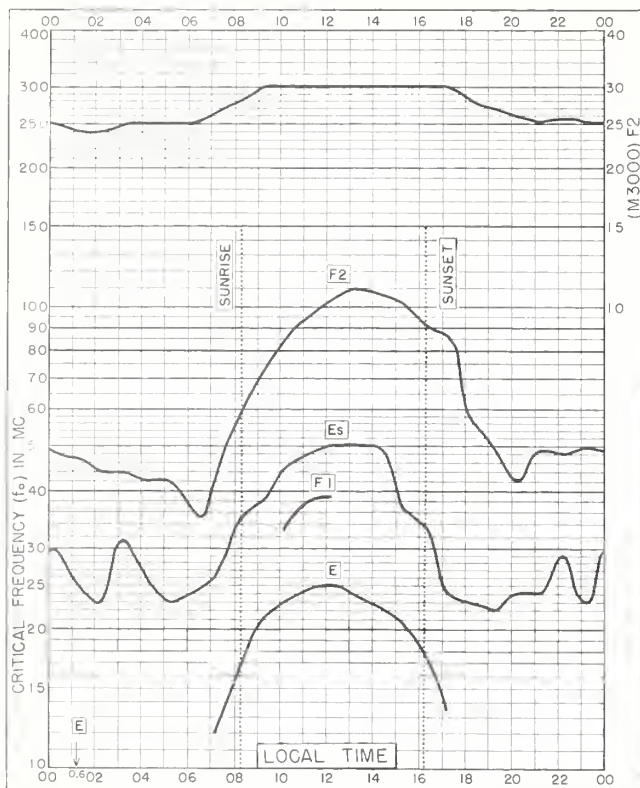


Fig. 83. SAO PAULO, BRAZIL

MARCH 1960





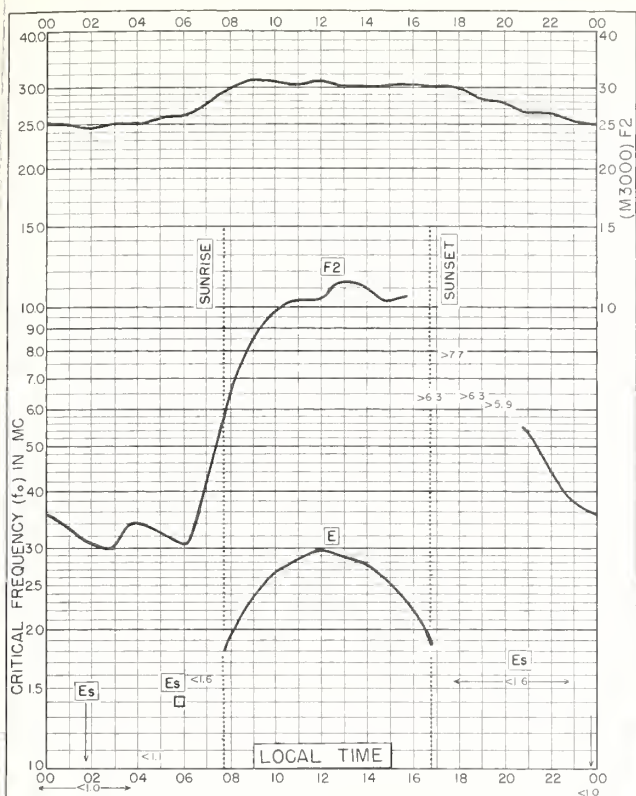


Fig. 88. INVERNESS, SCOTLAND  
57.4°N, 4.2°W FEBRUARY 1960

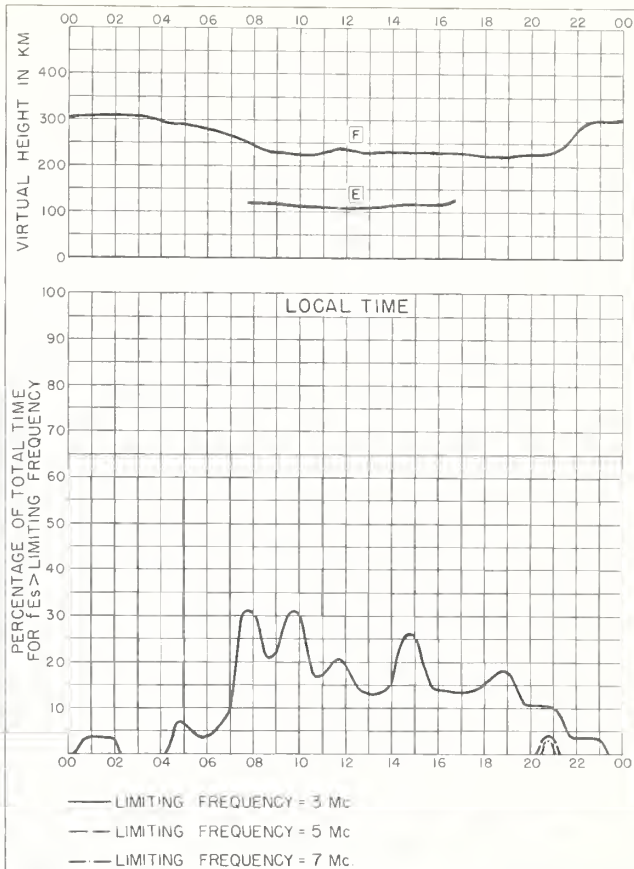


Fig. 89. INVERNESS, SCOTLAND FEBRUARY 1960

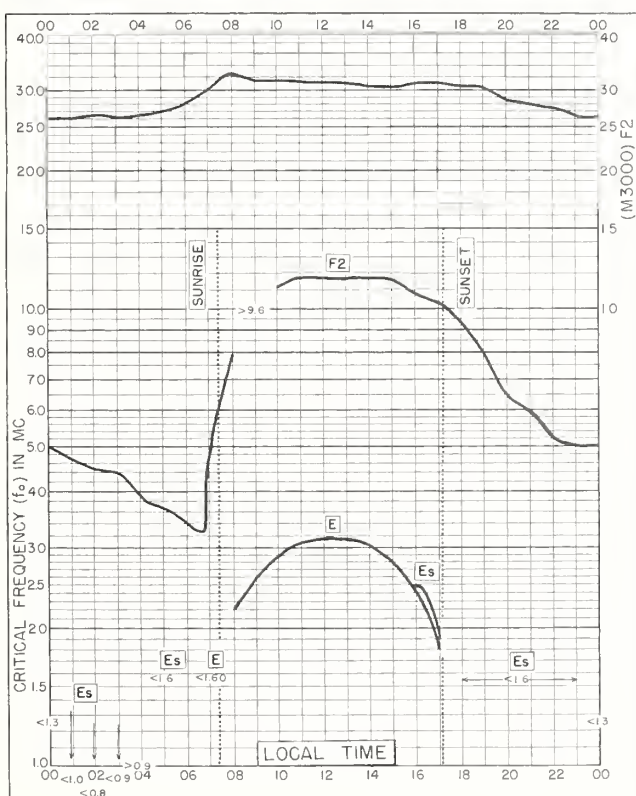


Fig. 90. SLOUGH, ENGLAND  
51.5°N, 0.6°W FEBRUARY 1960

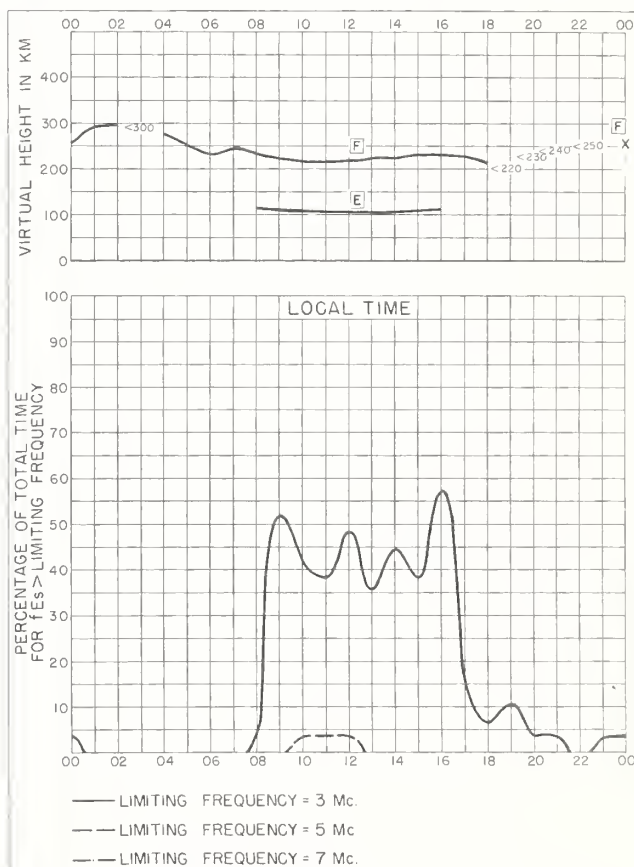


Fig. 91. SLOUGH, ENGLAND FEBRUARY 1960



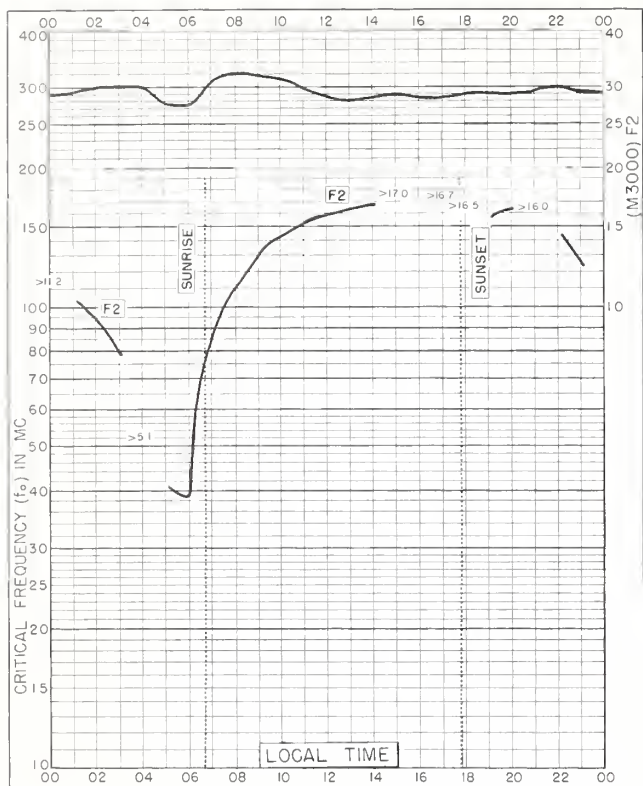


Fig. 92. FORMOSA, CHINA  
25.0°N, 121.5°E

FEBRUARY 1960

NBS 503

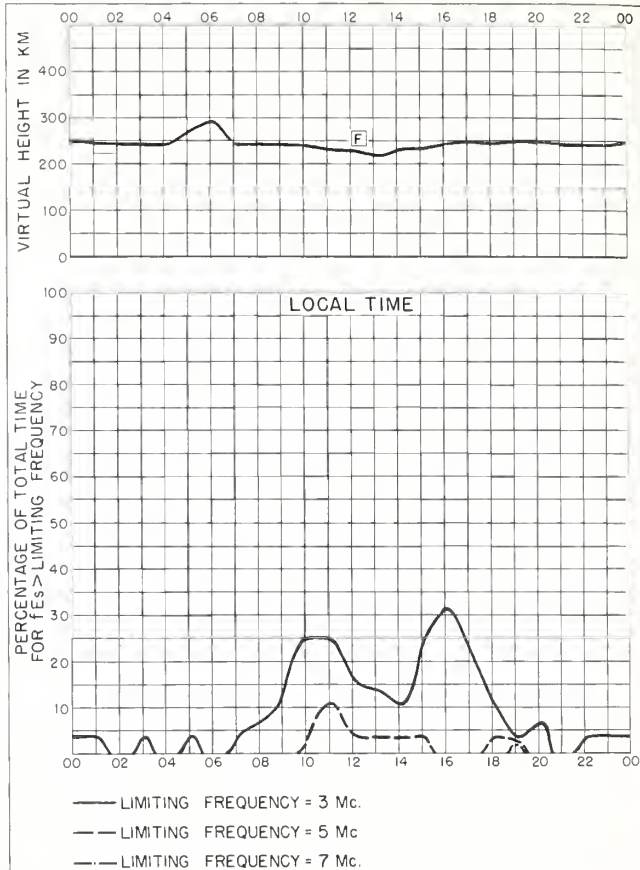


Fig. 93. FORMOSA, CHINA

FEBRUARY 1960

NBS 490

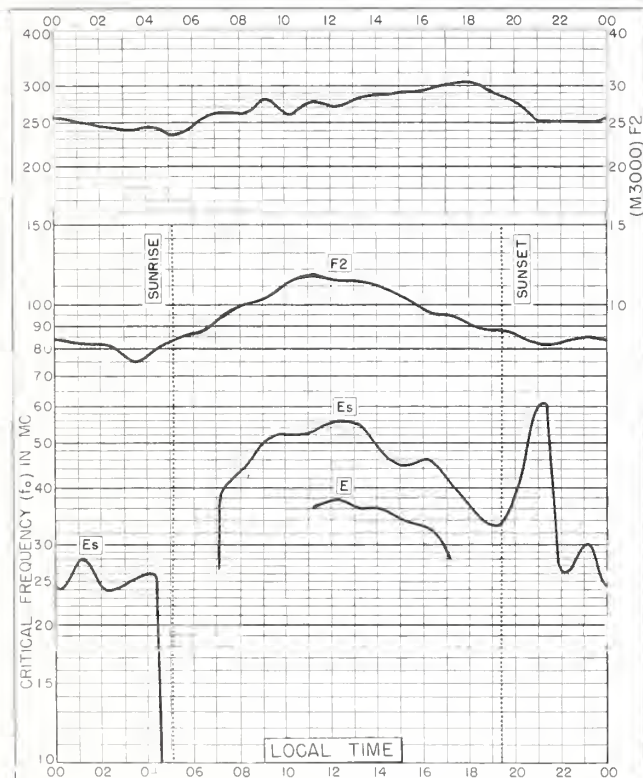


Fig. 94. FALKLAND IS.  
51.7°S, 57.8°W

FEBRUARY 1960

NBS 503

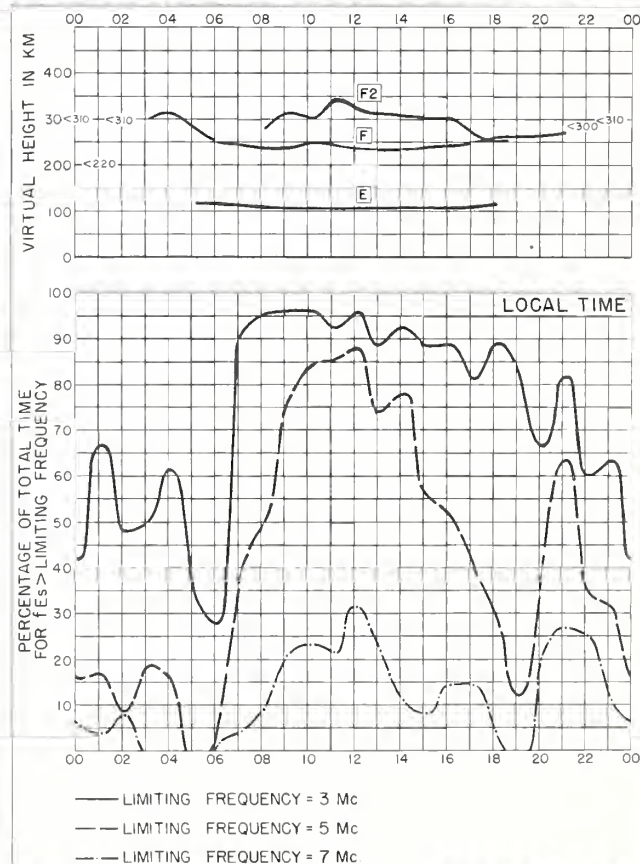


Fig. 95. FALKLAND IS.

FEBRUARY 1960

NBS 490



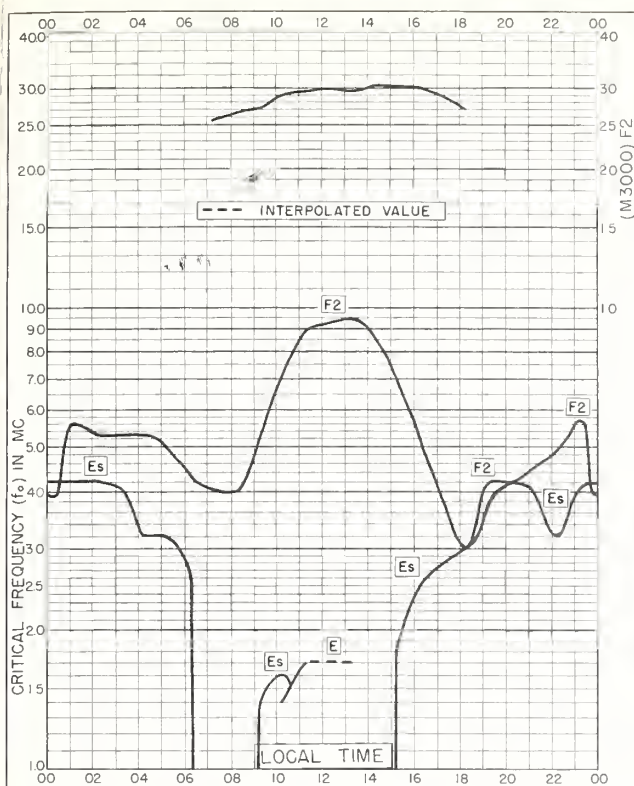


Fig. 96. TROMSØ, NORWAY  
69.7°N, 19.0°E

JANUARY 1960

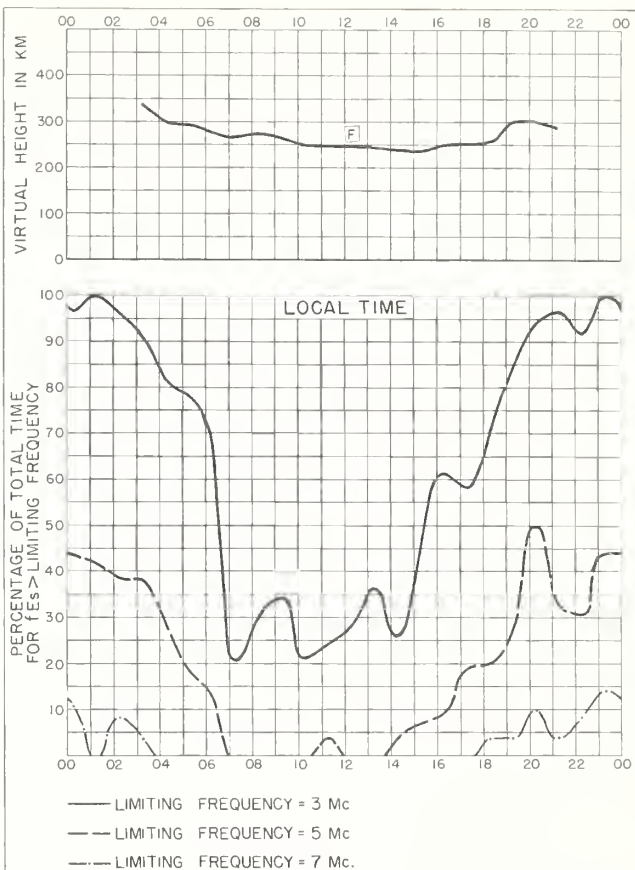


Fig. 97. TROMSØ, NORWAY

JANUARY 1960

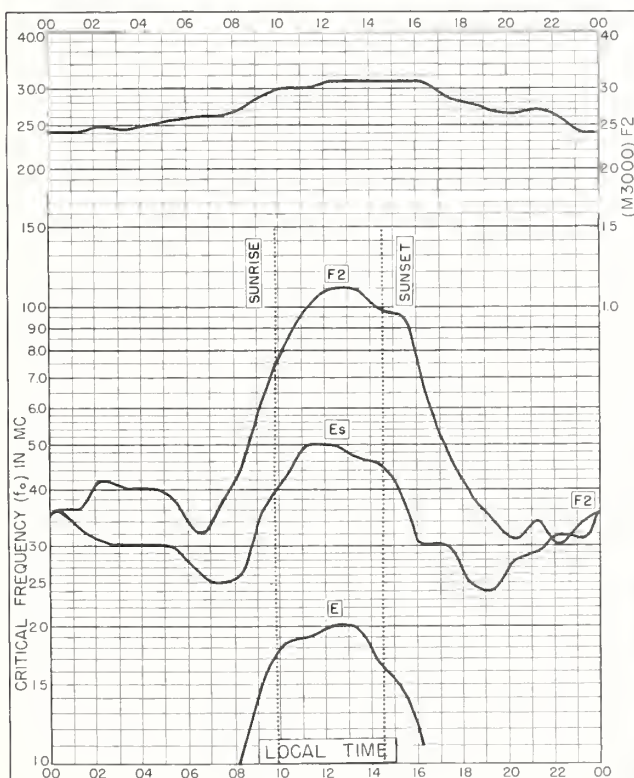


Fig. 98. LYCKSELE, SWEDEN  
64.6°N, 18.8°E

JANUARY 1960

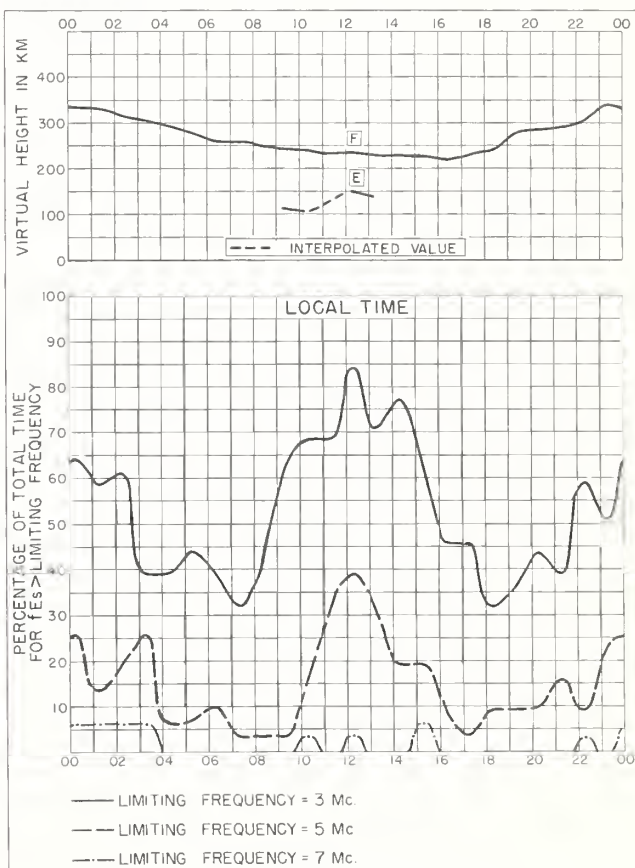


Fig. 99. LYCKSELE, SWEDEN

JANUARY 1960

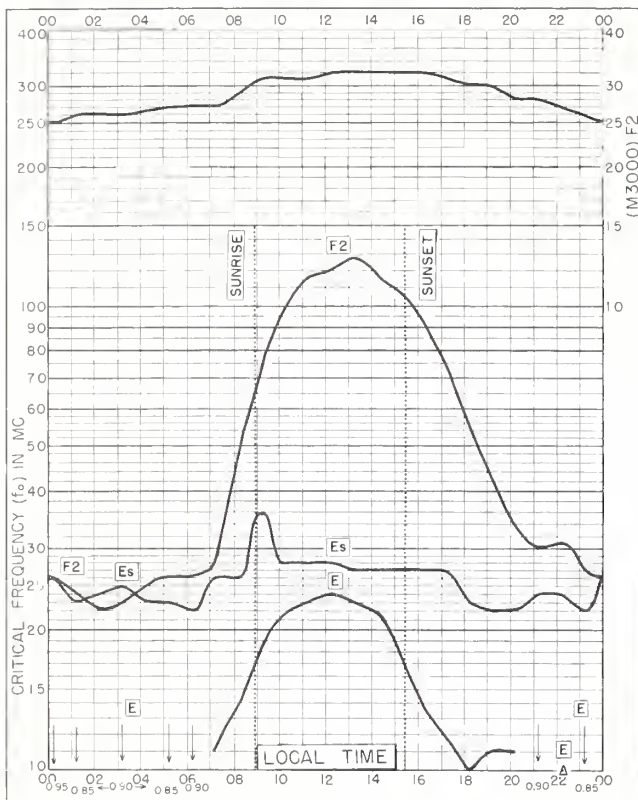


Fig. 100. UPSALA, SWEDEN

59.8°N, 17.6°E

JANUARY 1960

NBS 503

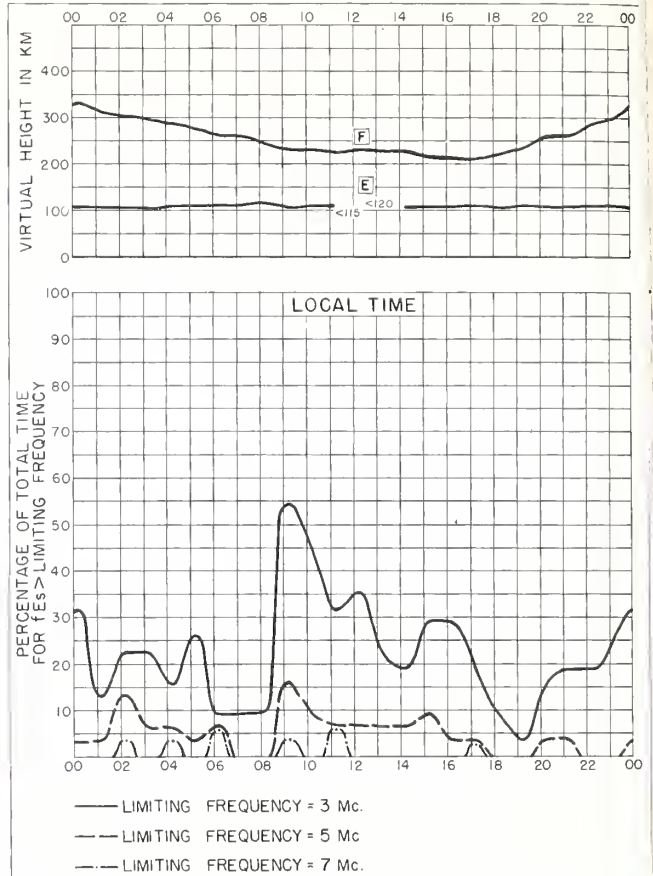


Fig. 101. UPSALA, SWEDEN

JANUARY 1960

NBS 490

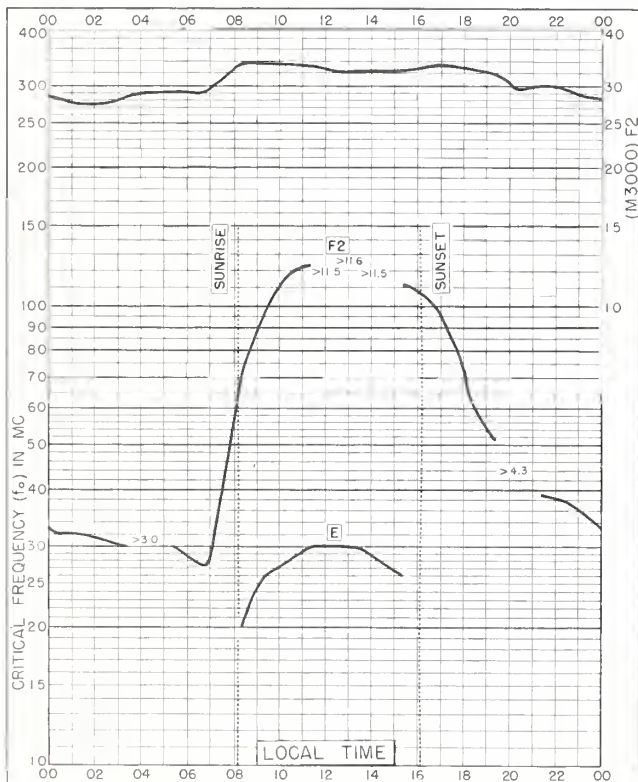


Fig. 102. De BILT, HOLLAND

52.1°N, 5.2°E

JANUARY 1960

NBS 503

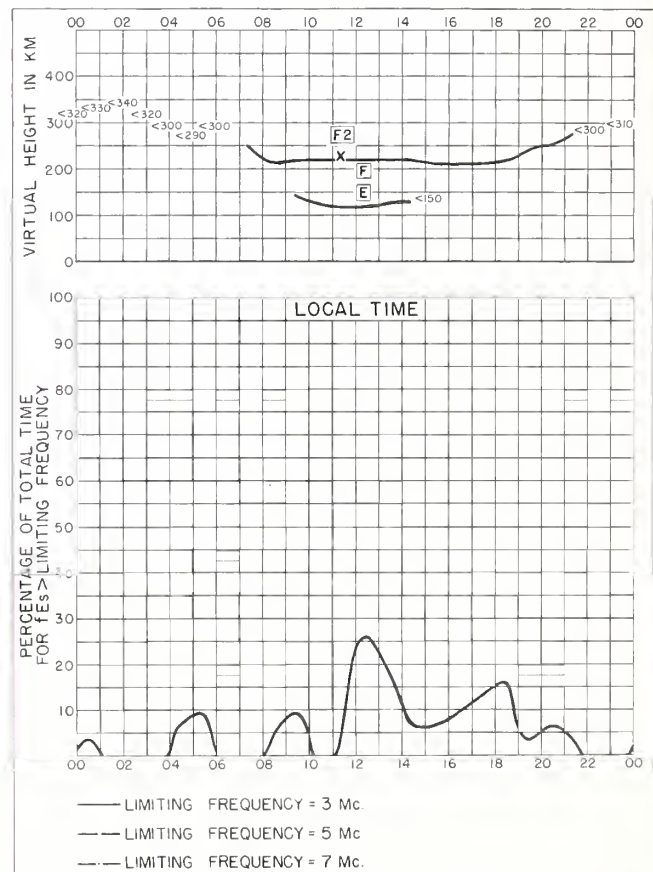
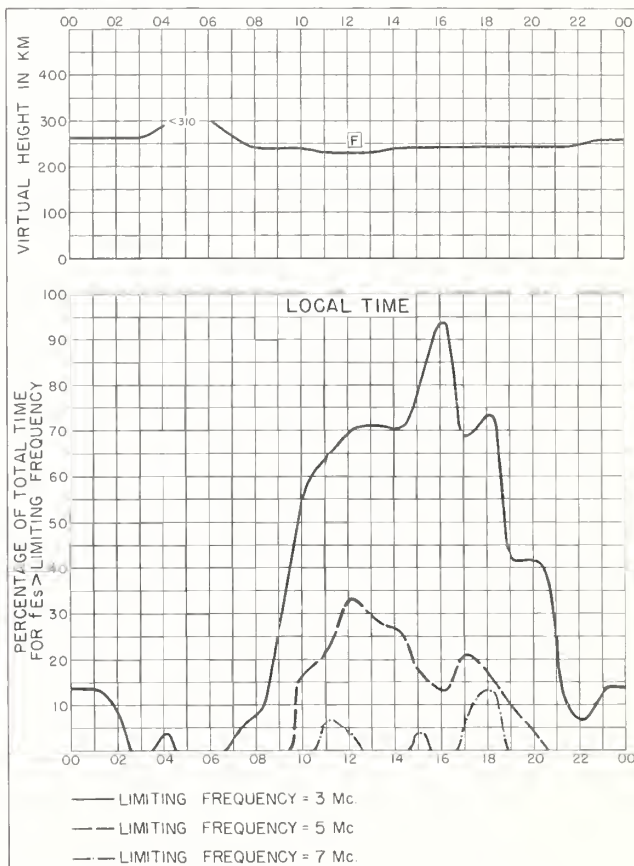
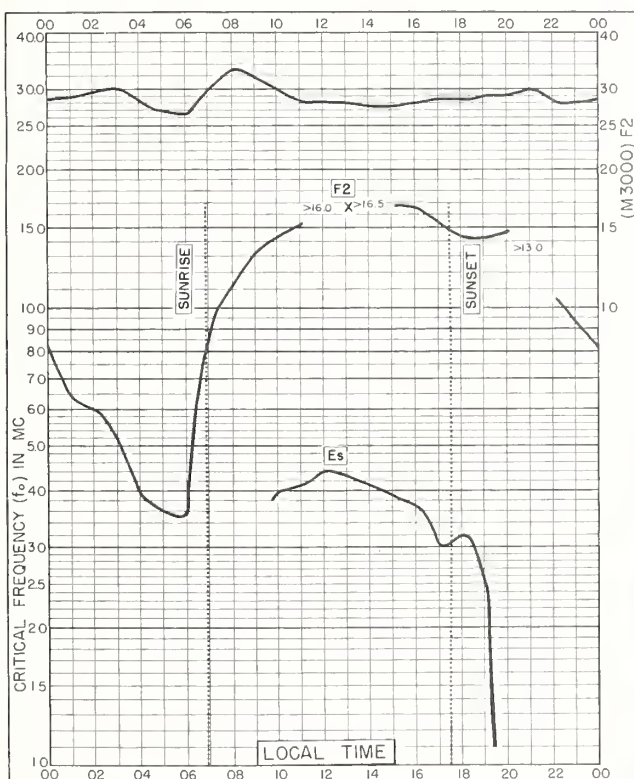
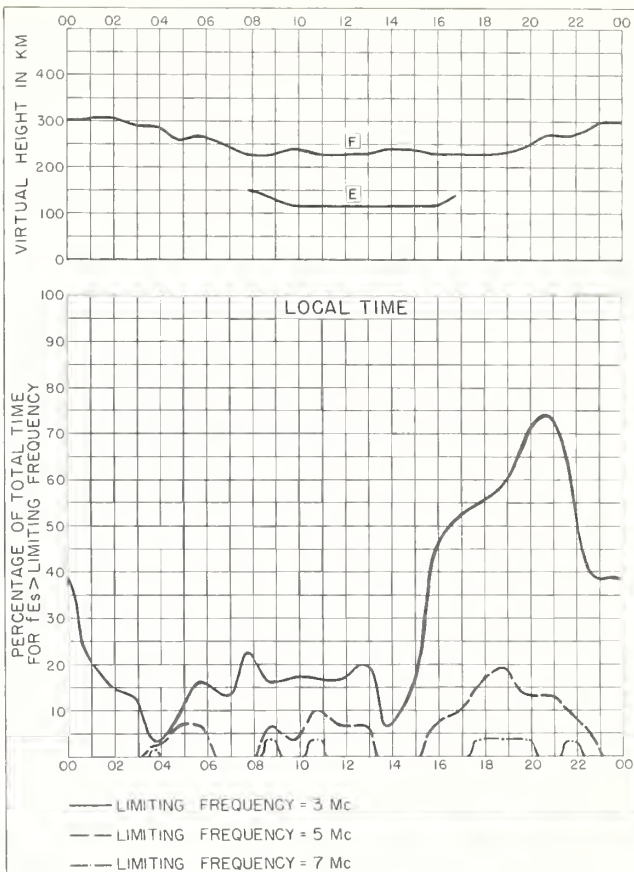
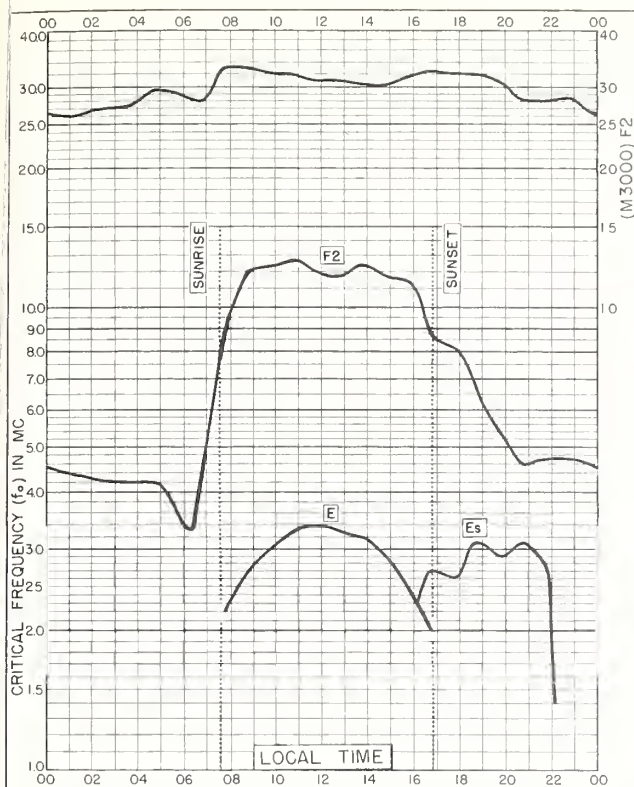


Fig. 103. De BILT, HOLLAND

JANUARY 1960

NBS 490





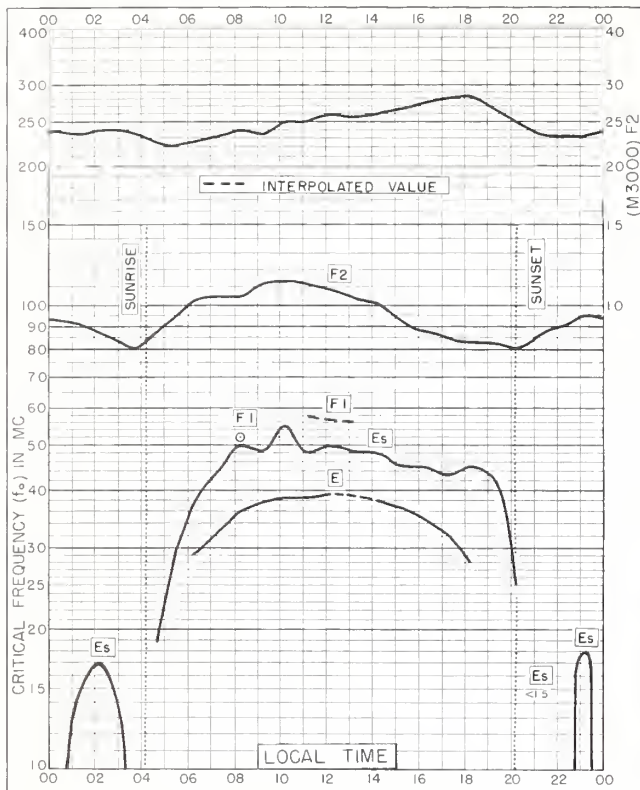


Fig. 108. FALKLAND IS.  
51.7°S, 57.8°W

JANUARY 1960

NBS 503

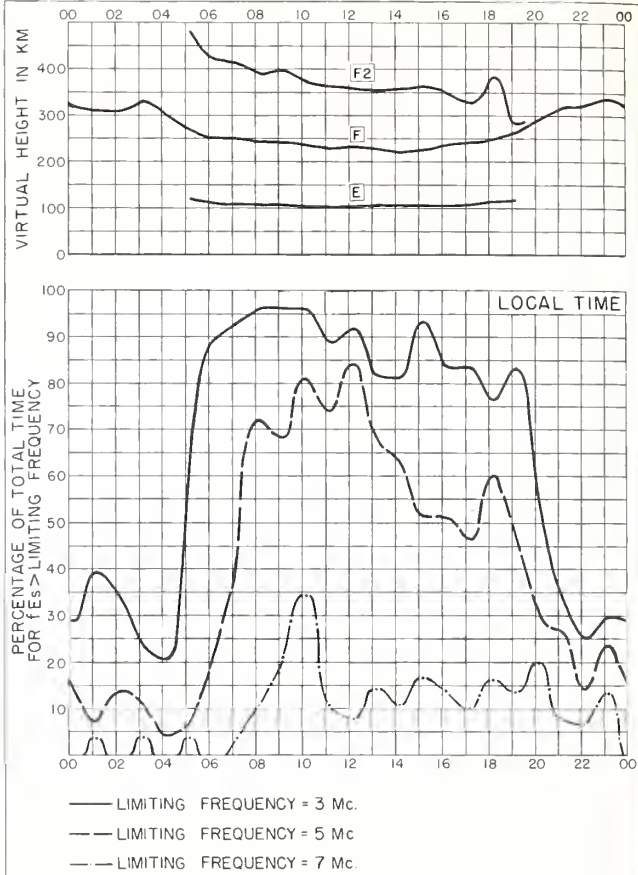


Fig. 109. FALKLAND IS.

JANUARY 1960

NBS 490

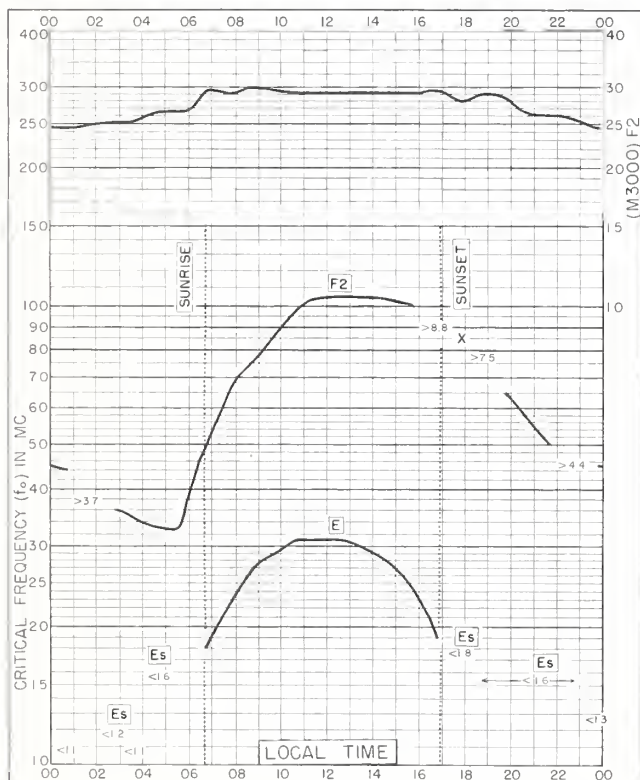


Fig. 110. INVERNESS, SCOTLAND  
57.4°N, 4.2°W

OCTOBER 1959

NBS 503

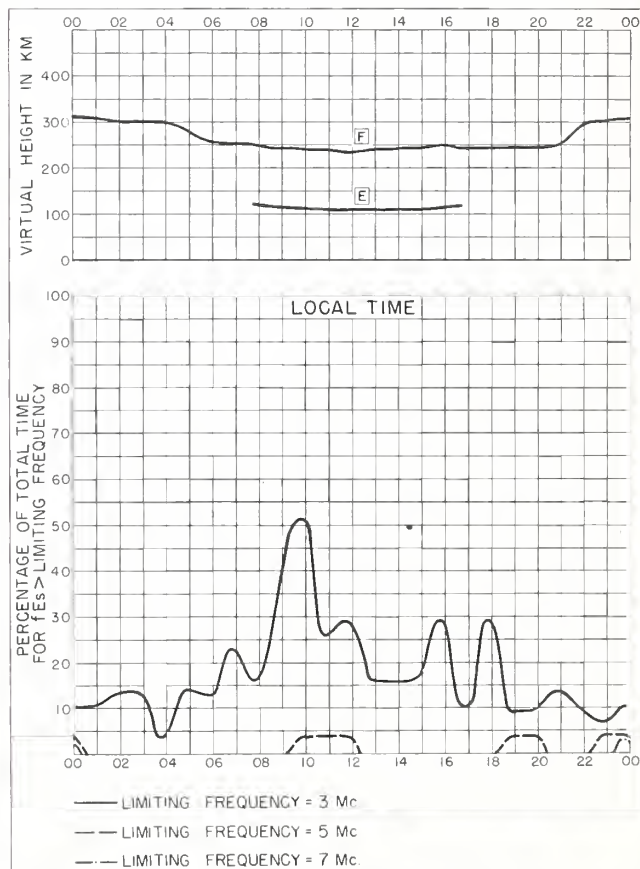


Fig. 111. INVERNESS, SCOTLAND

OCTOBER 1959

NBS 490



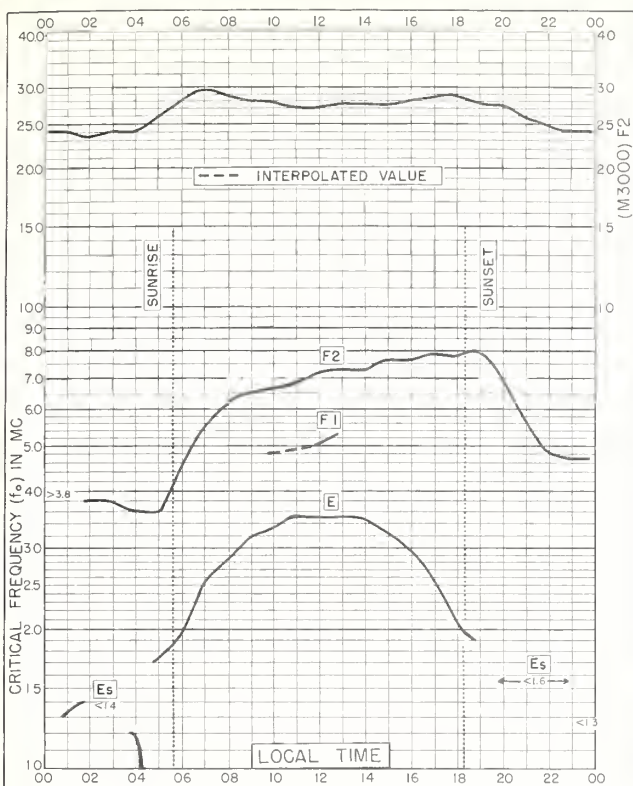


Fig. 112. INVERNESS, SCOTLAND  
57.4°N, 4.2°W SEPTEMBER 1959

NBS 503

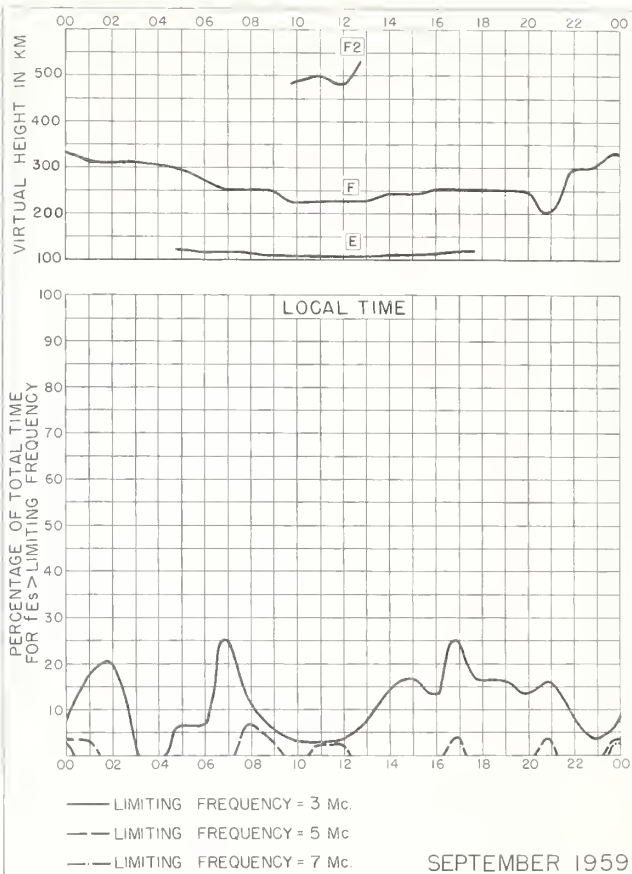


Fig. 113. INVERNESS, SCOTLAND

NBS 490

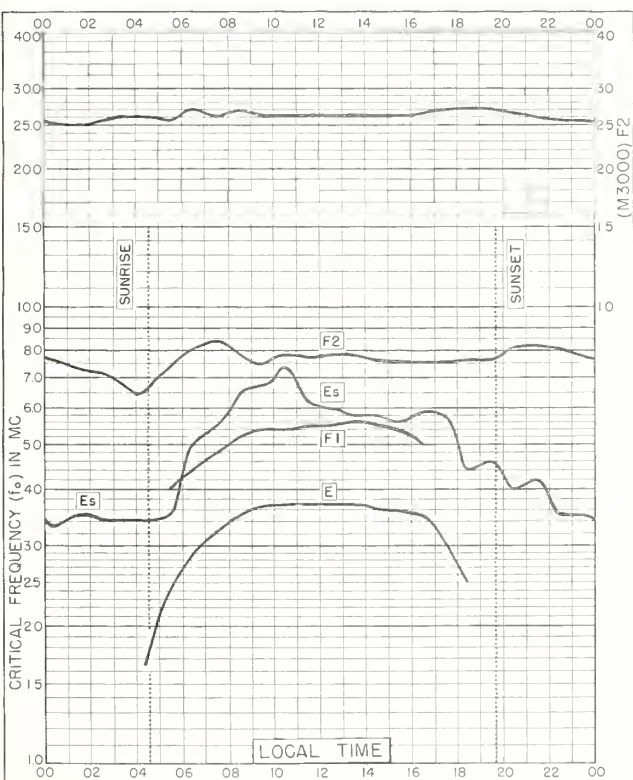


Fig. 114. WAKKANAI, JAPAN  
45.4°N, 141.7°E

JULY 1959

NBS 503

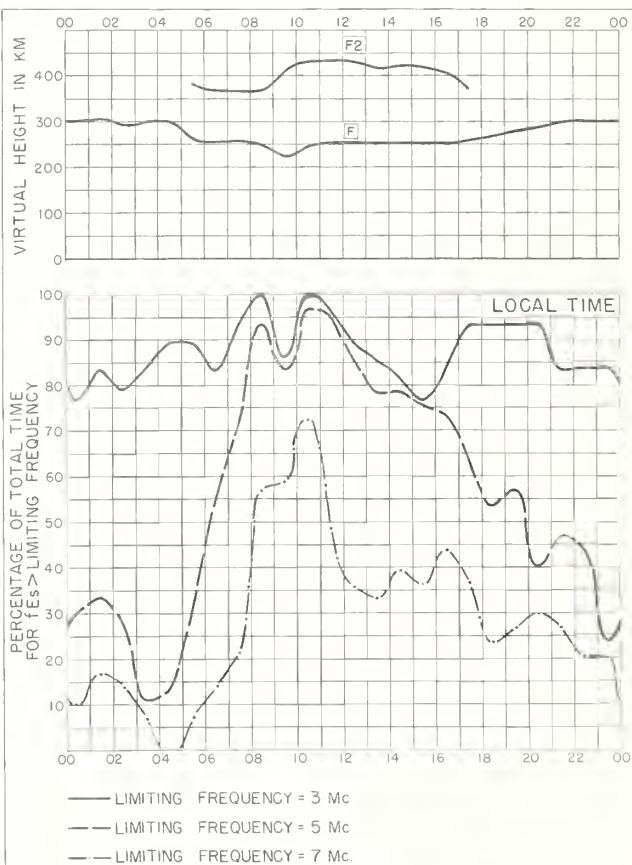


Fig. 115. WAKKANAI, JAPAN

JULY 1959

NBS 490



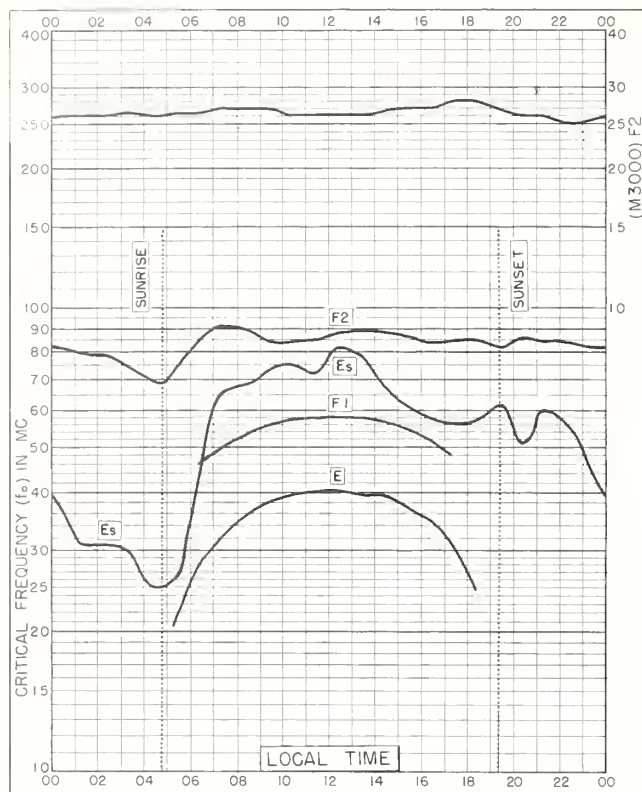


Fig 116. AKITA, JAPAN  
39.7°N, 140.1°E

JULY 1959

NBS 503

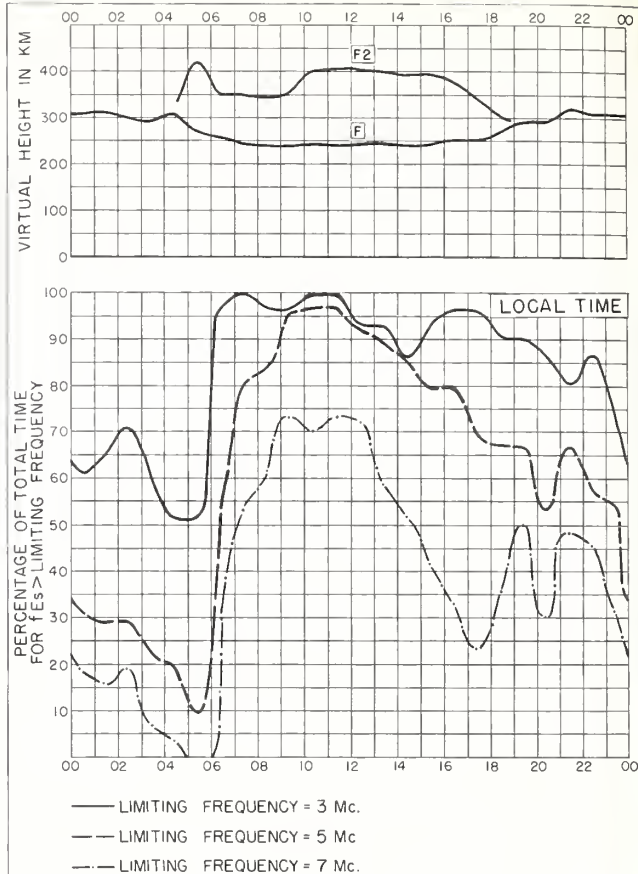


Fig. 117. AKITA, JAPAN

JULY 1959

NBS 490

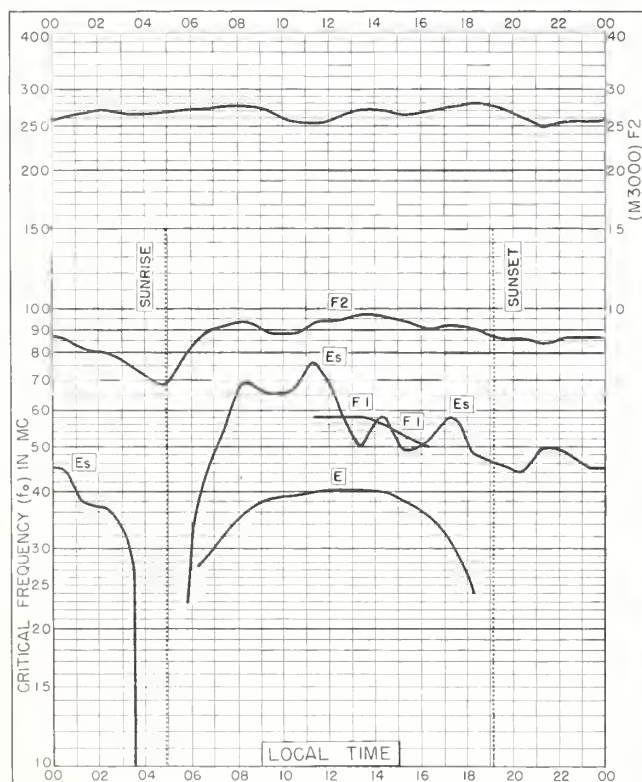


Fig 118. TOKYO, JAPAN  
35.7°N, 139.5°E

JULY 1959

NBS 503

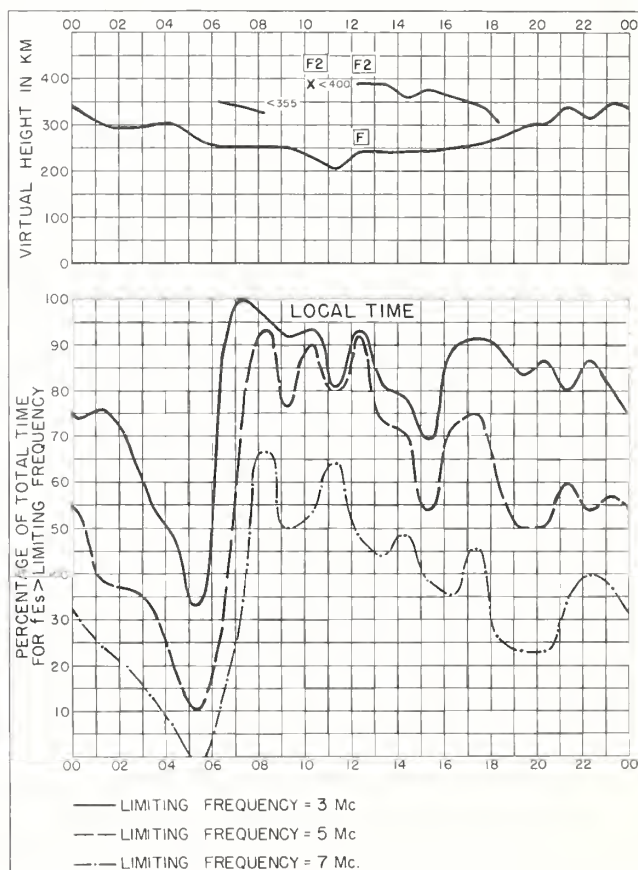
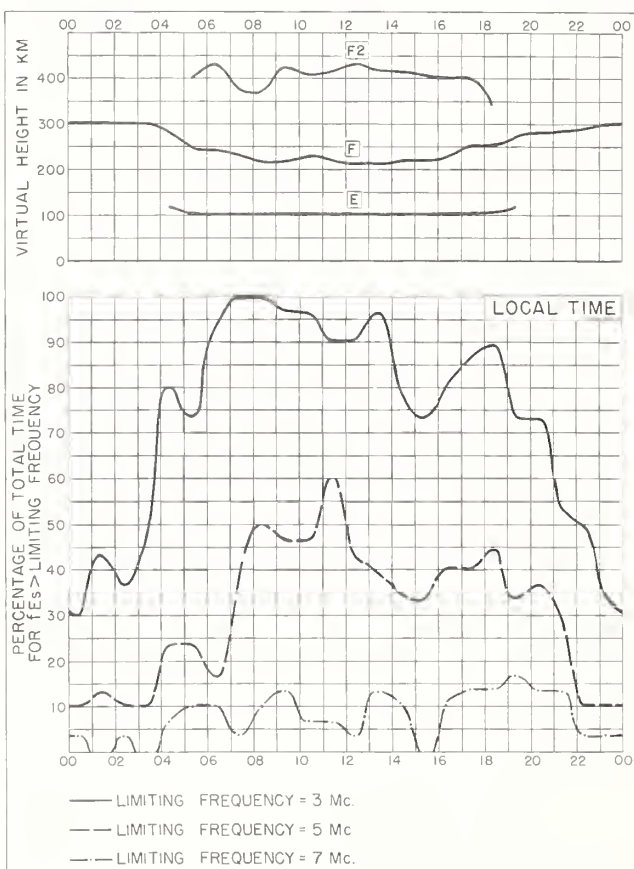
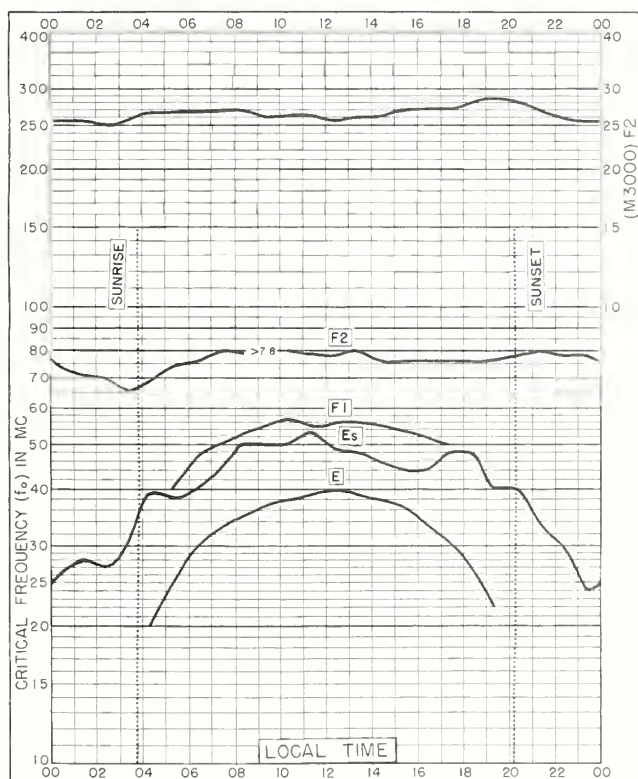
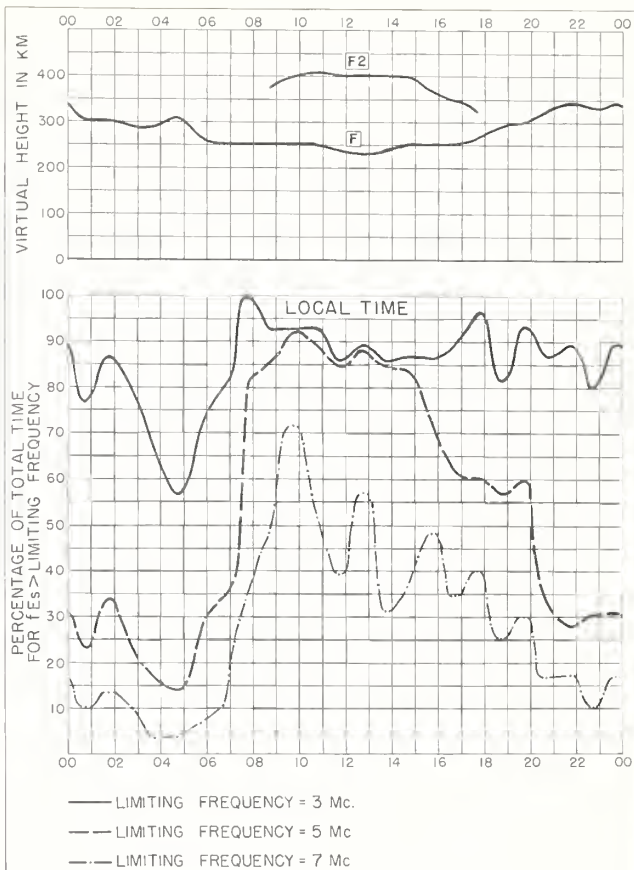
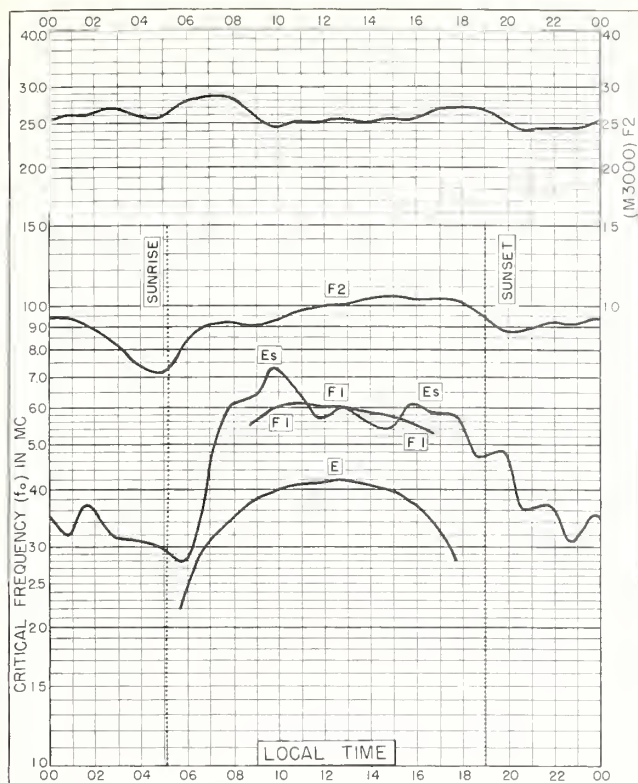


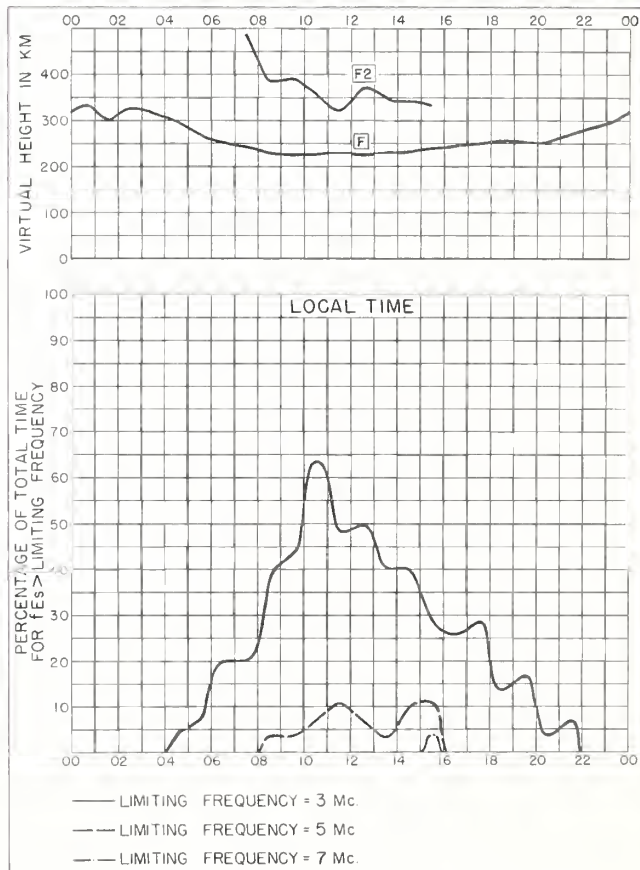
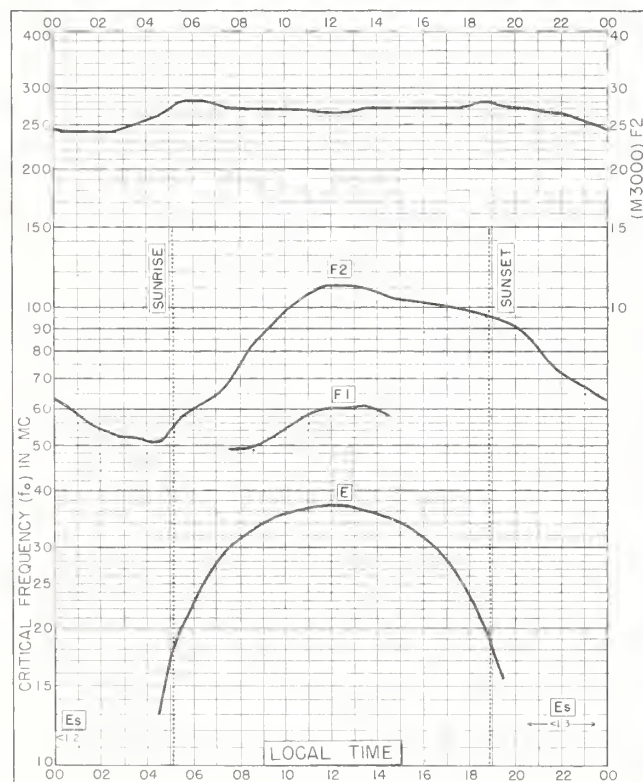
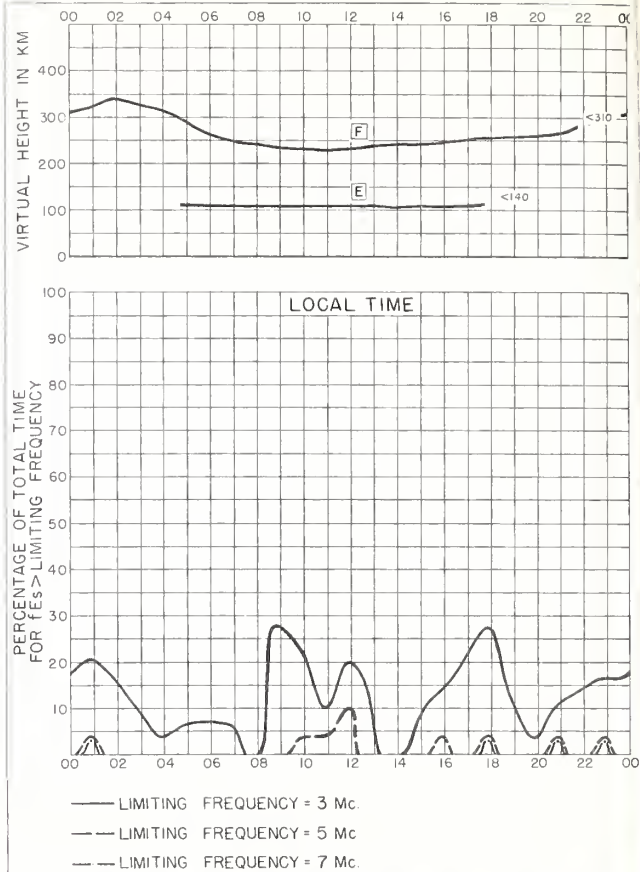
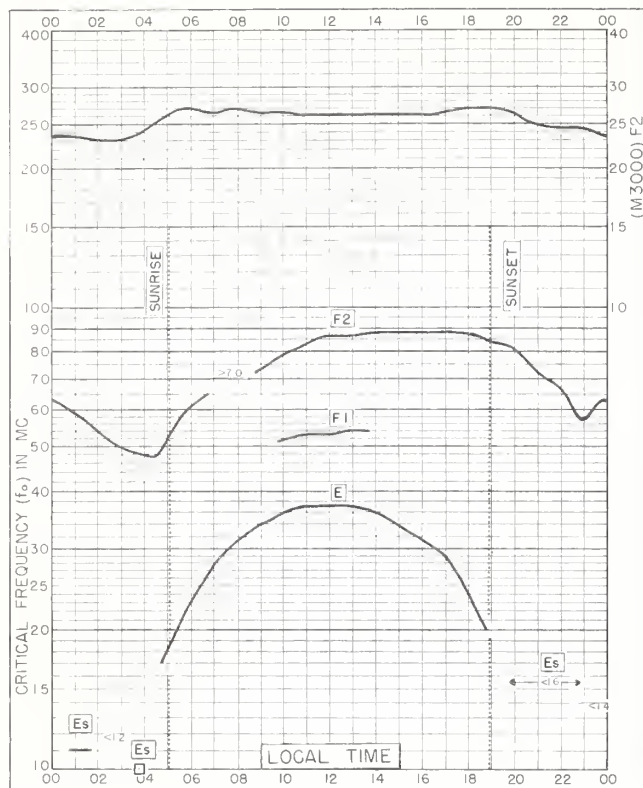
Fig. 119. TOKYO, JAPAN

JULY 1959

NBS 490







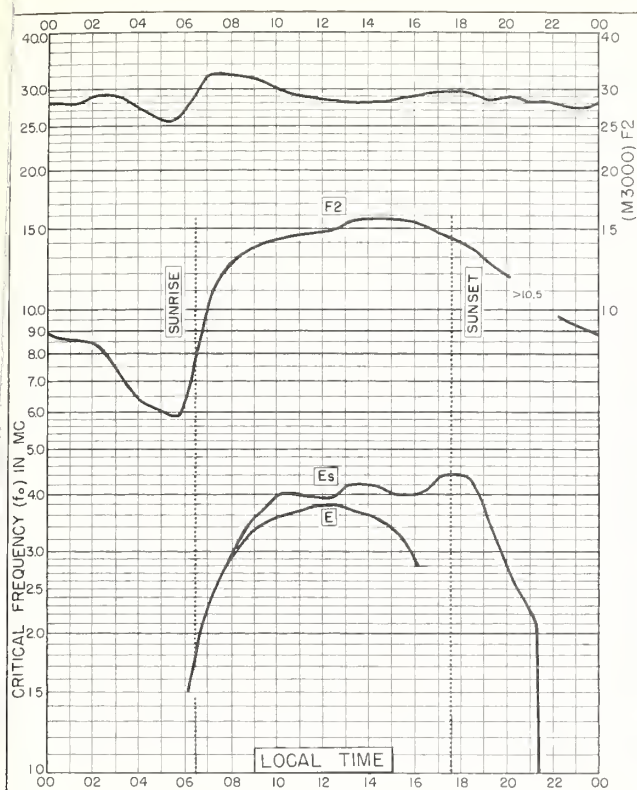


Fig. 128. CONCEPCION, CHILE  
36.6°S, 73.0°W

APRIL 1959

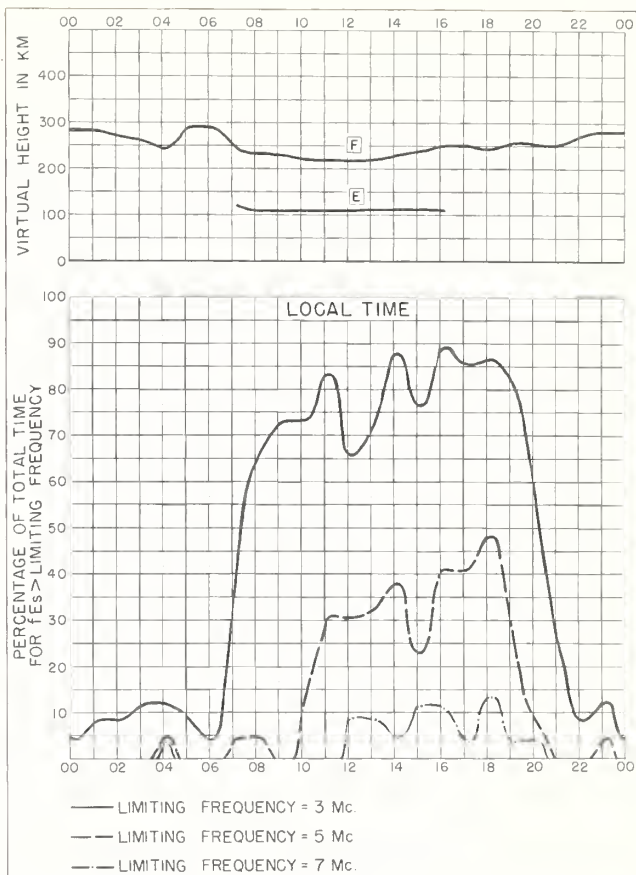


Fig. 129. CONCEPCION, CHILE

APRIL 1959

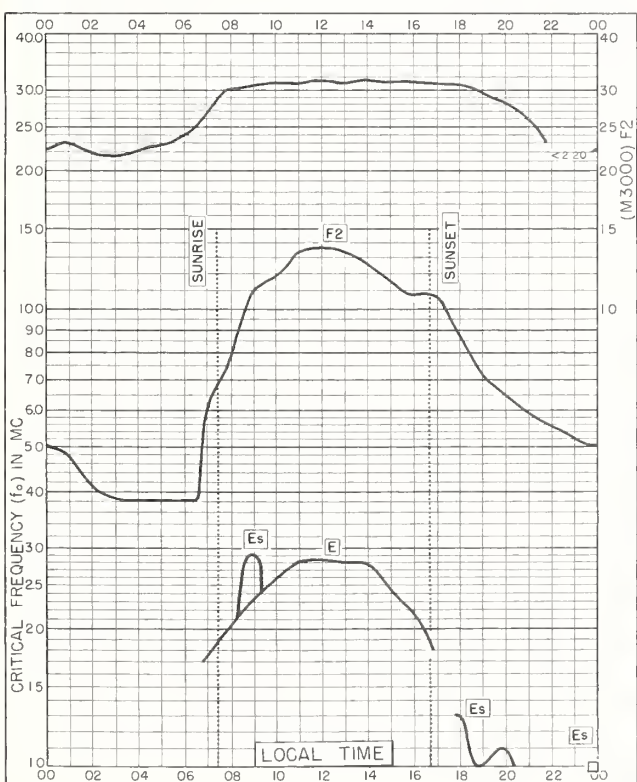


Fig. 130. PORT LOCKROY  
64.8°S, 63.5°W

APRIL 1959

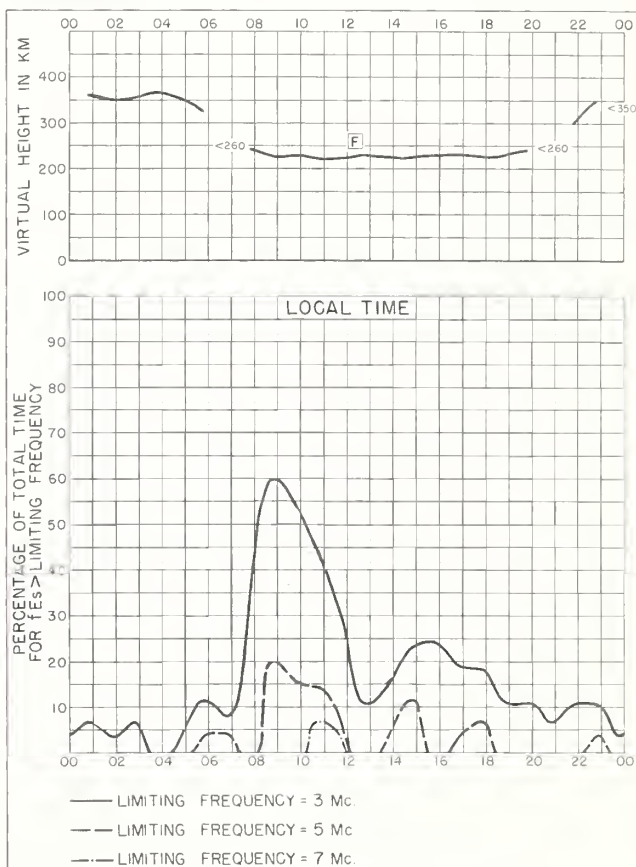


Fig. 131. PORT LOCKROY

APRIL 1959



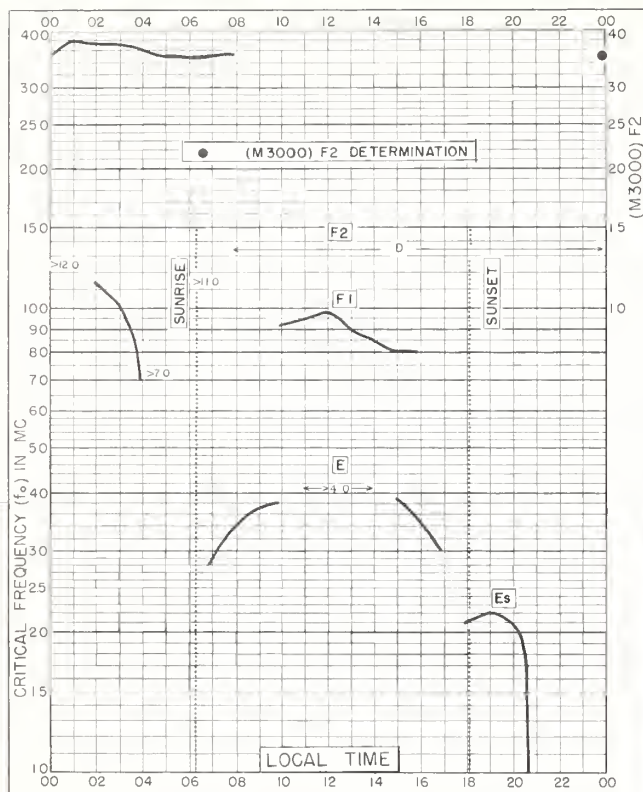


Fig. 132. CALCUTTA, INDIA  
23.0°N, 88.6°E

MARCH 1959

NBS 503

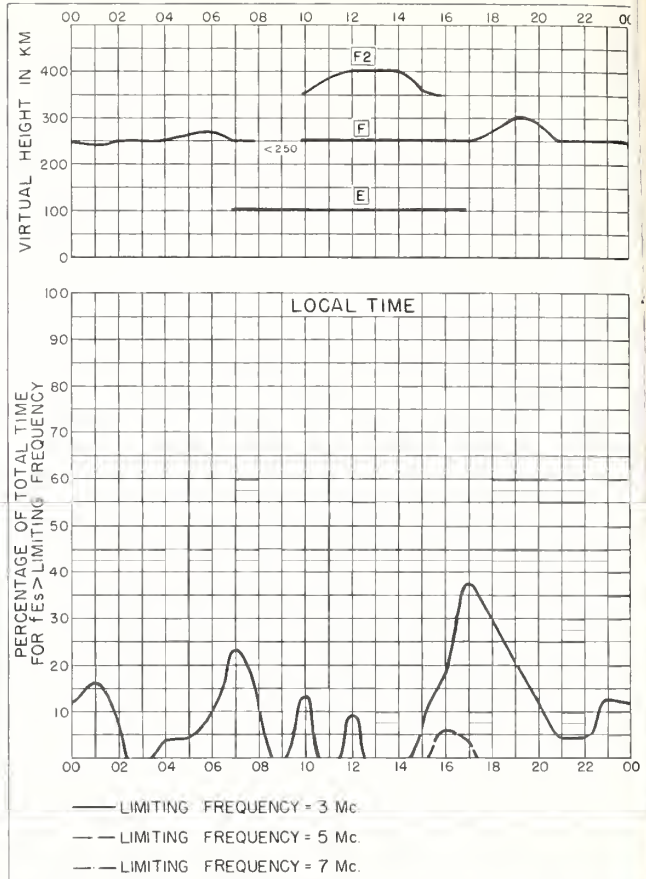


Fig. 133. CALCUTTA, INDIA

MARCH 1959

NBS 490

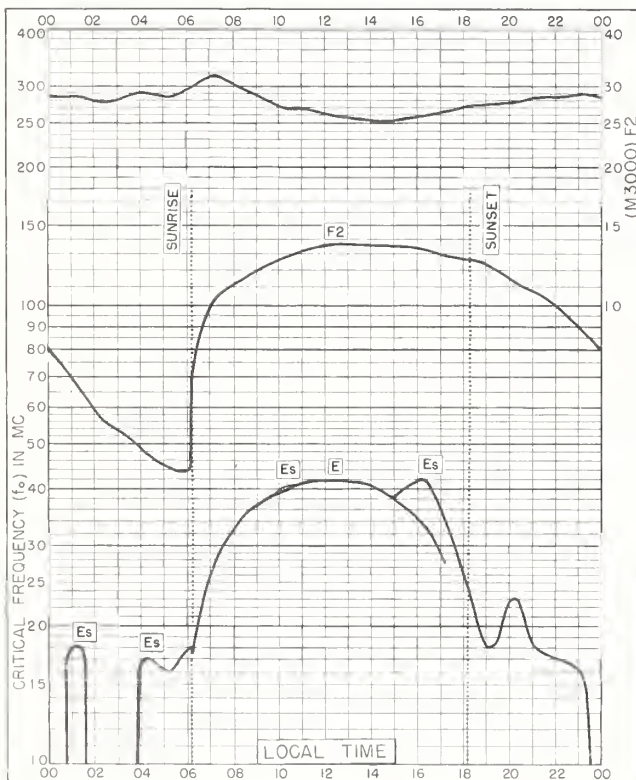


Fig. 134. TSUMEB, SOUTH W. AFRICA  
19.2°S, 17.7°E

MARCH 1959

NBS 503

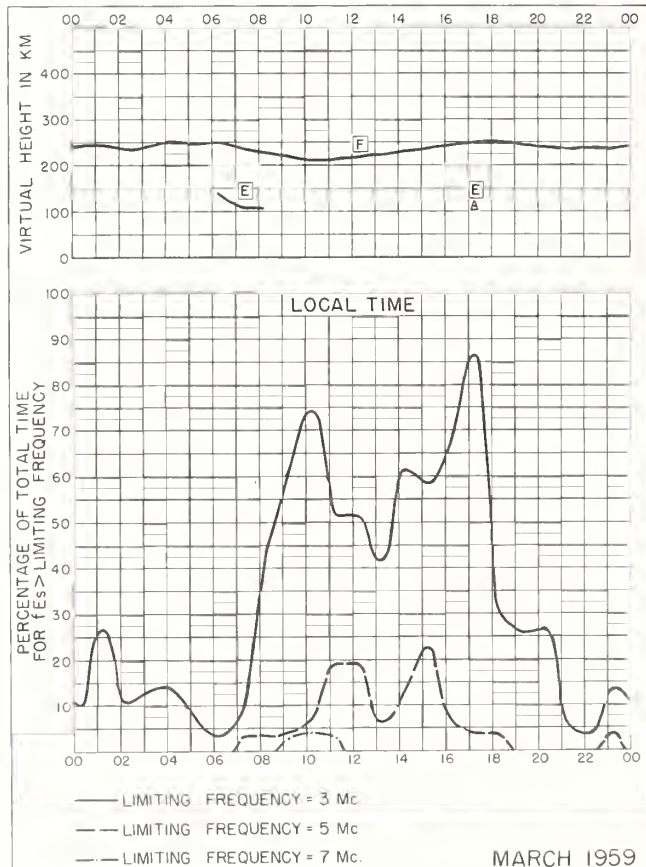


Fig. 135. TSUMEB, SOUTH W. AFRICA

MARCH 1959

NBS 490



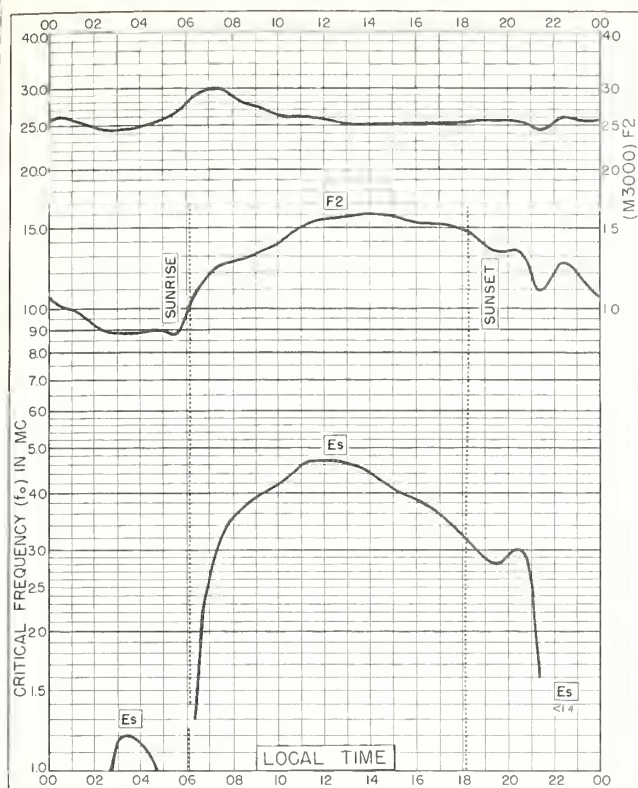


Fig. 136. RAROTONGA I.  
21.2°S, 159.8°W

MARCH 1959

NBS 503

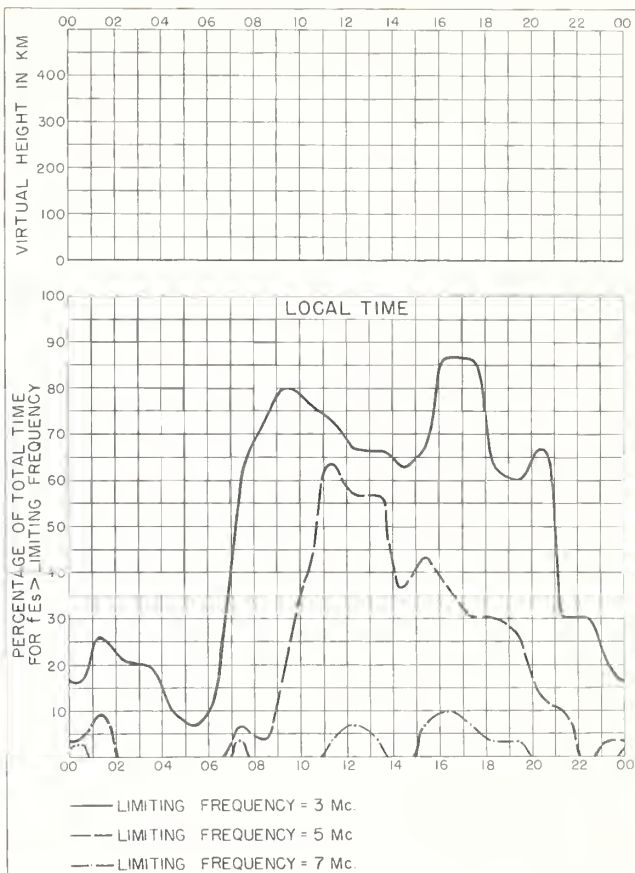


Fig. 137. RAROTONGA I.

MARCH 1959

NBS 490

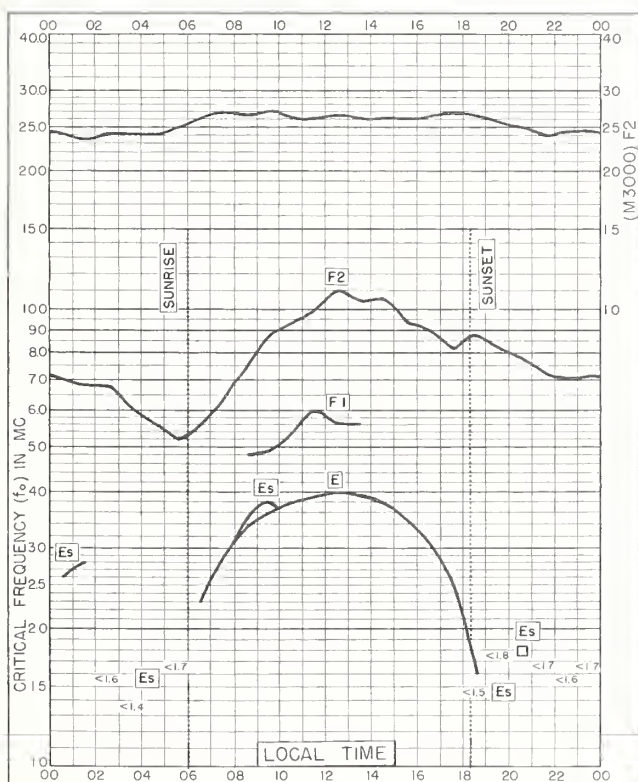


Fig. 138. CHRISTCHURCH, NEW ZEALAND  
43.6°S, 172.8°E

MARCH 1959

NBS 503

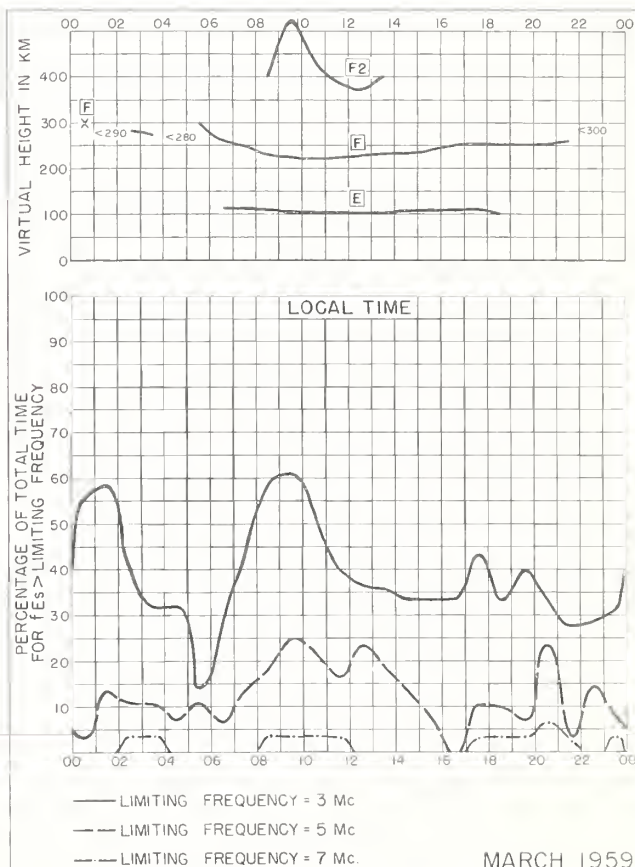


Fig. 139. CHRISTCHURCH, NEW ZEALAND

MARCH 1959

NBS 490

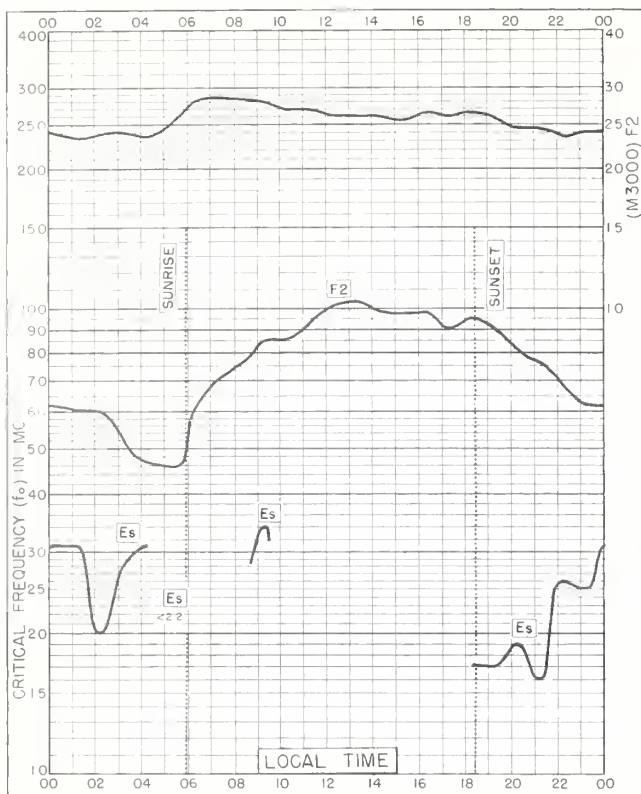


Fig. 140. CAMPBELL I.

52.5°S, 169.2°E

MARCH 1959

NBS 503

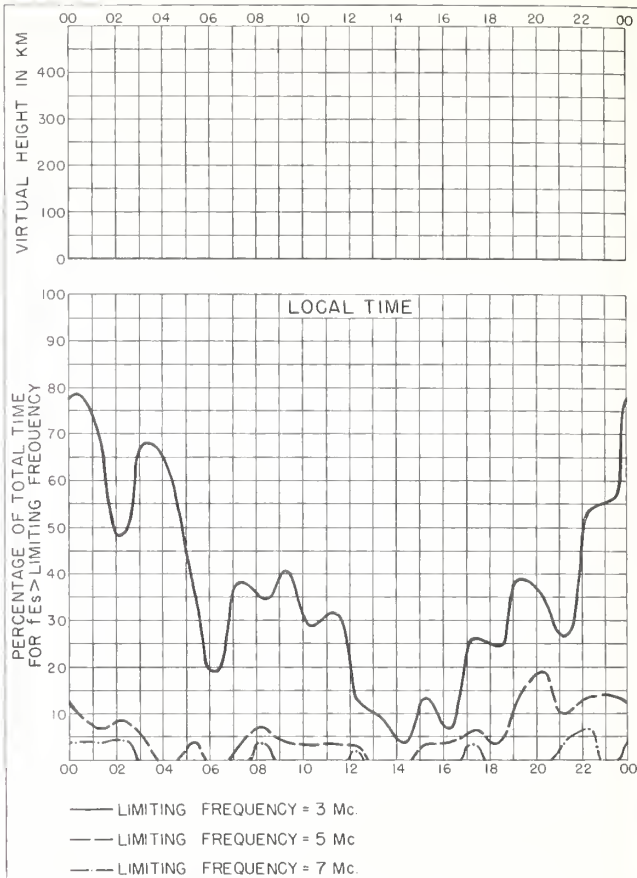


Fig. 141. CAMPBELL I.

MARCH 1959

NBS 490

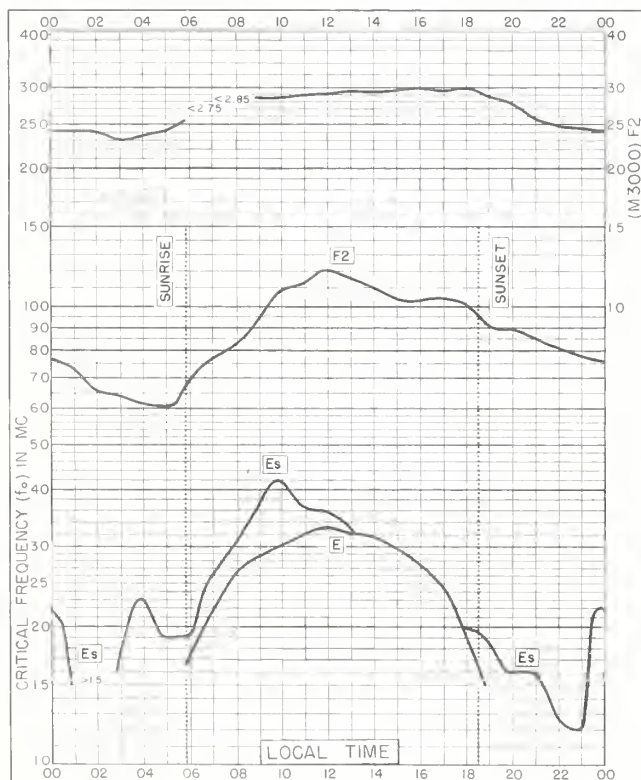


Fig. 142. PORT LOCKROY

64.8°S, 63.5°W

MARCH 1959

NBS 503

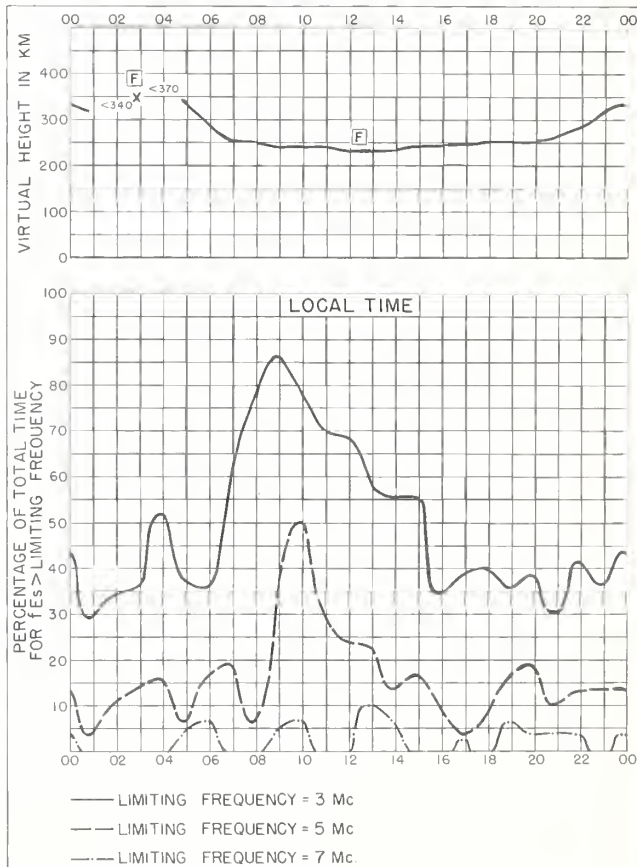


Fig. 143. PORT LOCKROY

MARCH 1959

NBS 490

Index of Tables and Graphs of Ionospheric Data  
in CRPL-F207 (Part A)

	<u>Table page</u>	<u>Figure page</u>
Akita, Japan		
July 1959 . . . . .	10	42
Baguio, P. I.		
April 1960 . . . . .	6	30
Byrd Station		
April 1960 . . . . .	7	32
Calcutta, India		
March 1959 . . . . .	12	46
Campbell I.		
March 1959 . . . . .	12	48
Capetown, Union of S. Africa		
April 1961 . . . . .	5	25
Christchurch, New Zealand		
March 1959 . . . . .	12	47
Churchill, Canada		
April 1961 . . . . .	2	18
February 1960 . . . . .	8	34
Concepcion, Chile		
April 1960 . . . . .	7	31
April 1959 . . . . .	11	45
De Bilt, Holland		
April 1961 . . . . .	3	19
January 1960 . . . . .	9	38
June 1959 . . . . .	11	43
Dourbes, Belgium		
March 1961 . . . . .	5	26
Falkland Is.		
April 1961 . . . . .	5	25
March 1961 . . . . .	5	27
February 1960 . . . . .	8	36
January 1960 . . . . .	10	40
Formosa, China		
April 1961 . . . . .	4	23
February 1960 . . . . .	8	36
January 1960 . . . . .	9	39
Godhavn, Greenland		
April 1960 . . . . .	6	28
Grand Bahama I.		
April 1960 . . . . .	6	30
Graz, Austria		
April 1961 . . . . .	3	21
July 1960 . . . . .	5	27
Huancayo, Peru		
May 1961 . . . . .	1	14

Index (CRPL-F207 (Part A), continued)

	<u>Table page</u>	<u>Figure page</u>
Inverness, Scotland		
April 1961 . . . . .	2	18
February 1960 . . . . .	8	35
October 1959 . . . . .	10	40
September 1959 . . . . .	10	41
April 1959 . . . . .	11	44
Johannesburg, Union of S. Africa		
April 1961 . . . . .	4	24
Juliusruh/Rügen, Germany		
March 1960 . . . . .	7	32
Kiruna, Sweden		
April 1961 . . . . .	1	15
Lindau/Harz, Germany		
April 1960 . . . . .	6	29
Lulea, Sweden		
April 1961 . . . . .	2	16
Lycksele, Sweden		
April 1961 . . . . .	2	16
February 1960 . . . . .	8	34
January 1960 . . . . .	9	37
Macau		
March 1960 . . . . .	7	33
Moscow, U.S.S.R.		
April 1959 . . . . .	11	44
Mundaring, W. Australia		
April 1961 . . . . .	4	24
Narssarssuaq, Greenland		
April 1960 . . . . .	6	28
Nurmijarvi, Finland		
April 1961 . . . . .	2	17
Ottawa, Canada		
April 1961 . . . . .	4	22
Port Lockroy		
April 1959 . . . . .	11	45
March 1959 . . . . .	12	48
Pruhonice, Czechoslovakia		
April 1961 . . . . .	3	19
April 1960 . . . . .	6	29
Rarotonga I.		
March 1959 . . . . .	12	47
Rome, Italy		
April 1961 . . . . .	4	22
January 1960 . . . . .	9	39
St. John's, Newfoundland		
April 1961 . . . . .	3	20



Index (CRPL-F207 (Part A), concluded)

	<u>Table page</u>	<u>Figure page</u>
Sao Paulo, Brazil		
April 1960 . . . . .	7	31
March 1960 . . . . .	7	33
Singapore, British Malaya		
April 1961 . . . . .	4	23
Slough, England		
March 1961 . . . . .	5	26
February 1960 . . . . .	8	35
Sodankyla, Finland		
April 1961 . . . . .	1	15
Sottens, Switzerland		
April 1961 . . . . .	3	21
Talara, Peru		
May 1961 . . . . .	1	13
Tokyo, Japan		
July 1959 . . . . .	10	42
Tromso, Norway		
April 1961 . . . . .	1	14
January 1960 . . . . .	9	37
Tsumeb, South W. Africa		
March 1959 . . . . .	12	46
Upsala, Sweden		
April 1961 . . . . .	2	17
January 1960 . . . . .	9	38
Wakkanai, Japan		
July 1959 . . . . .	10	41
Washington, D. C.		
May 1961 . . . . .	1	13
Winnipeg, Canada		
April 1961 . . . . .	3	20
Yamagawa, Japan		
July 1959 . . . . .	11	43



---

## CRPL Reports

[A detailed list of CRPL publications is available from the Central Radio Propagation Laboratory upon request]

### Daily:

Radio disturbance forecasts, every half hour from broadcast stations WWV and WWVH of the National Bureau of Standards.

Telephoned and telegraphed reports of ionospheric, solar, geomagnetic, and radio propagation data.

### Weekly:

CRPL—J. North Atlantic Radio Propagation Forecast.

CRPL—Jp. North Pacific Radio Propagation Forecast.

### Semimonthly:

CRPL—Ja. Semimonthly Frequency Revision Factors For CRPL Basic Radio Propagation Prediction Reports.

### Monthly:

CRPL—D. Basic Radio Propagation Predictions—Three months in advance. (Dept. of the Army, TB 11—499—, monthly supplements to TM 11—499; Dept. of the Air Force, TO 31—3—28 series). On sale by Superintendent of Documents. Members of the Armed Forces should address cognizant military office.

CRPL—F. (Part A). Ionospheric Data.  
(Part B). Solar-Geophysical Data.

Limited distribution. These publications are in general disseminated only to those individuals or scientific organizations which collaborate in the exchange of ionospheric, solar, geomagnetic, or other radio propagation data.

### Catalog of Data:

A catalog of records and data on file at the U. S. IGY World Data Center A for Airglow and Ionosphere, Boulder Laboratories, National Bureau of Standards, which includes a fee schedule to cover the cost of supplying copies, is available upon request.

The publications listed above may be obtained without charge from the Central Radio Propagation Laboratory, National Bureau of Standards, Boulder Laboratories, Boulder, Colorado, unless otherwise indicated. Please note that the F series is not generally available.

---

### Circulars of the National Bureau of Standards pertaining to Radio Sky Wave Transmission:

NBS Circular 462. Ionospheric Radio Propagation. \$1.25.

NBS Circular 465. Instructions for the Use of Basic Radio Propagation Predictions. 30 cents.

NBS Circular 557. Worldwide Radio Noise Levels Expected in the Frequency Band 10 Kilocycles to 100 megacycles. 30 cents.

NBS Circular 582. Worldwide Occurrence of Sporadic E. \$3.25.

These Circulars are on sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Members of the Armed Forces should address the respective military office having cognizance of radio wave propagation.

### Selected Technical Notes of the National Bureau of Standards:

NBS Tech. Note 2. PB151361. World Maps of F2 Critical Frequencies and Maximum Usable Frequency Factors. \$3.50. PB151361-2. \$3.50.

NBS Tech. Note 13. PB151372. Technical Considerations Leading to an Optimum Allocation of Radio Frequencies in the Band 25 to 60 Mc. \$2.50.

NBS Tech. Note 18. PB151377. Radio Noise Data for the IGY. \$2.50.

18-2. PB151377-2. Quarterly Radio Noise Data (Mar.-May 1959). \$1.00.

18-3. PB151377-3. (June-Aug. 1959). \$1.00.

18-4. PB151377-4, etc. (Sept.-Nov. 1959). \$1.50.

NBS Tech. Note 31. PB151390. An Atlas of Oblique-Incidence Ionograms. \$2.25.

NBS Tech. Note 40-1. PB151399-1. Mean Electron Density Variations of the Quiet Ionosphere, 1: March 1959. \$1.25.

40-2. PB151399-2, etc. 2: April 1959. \$1.25.

These Technical Notes are on sale by the Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C. Order by PB number.

